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WORLD HEALTH ORGANIZATION

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# THIRTEENTH WORLD HEALTH ASSEMBLY—2

*The July number of the Chronicle contained an account of the Thirteenth World Health Assembly and its main decisions. The article that follows is a summary of the Assembly's discussions on the report of the Director-General.*

The discussions on the Director-General's report on the work of WHO during 1959 [1] gave delegates to the Thirteenth World Health Assembly an opportunity to express the views of their governments on the Organization's policies and achievements, and to report on public health developments in their respective countries. A comprehensive account of the discussions will be found in the verbatim record of the plenary meetings and the minutes of the committees and subcommittees.[2] The following is a summary of the main items of discussion.

## Malaria eradication

In connexion with the Director-General's report, the delegates of a number of countries gave details of progress in malaria eradication.

The delegate of Afghanistan stated that malaria was the greatest public health problem in his country. The eradication campaign there had started 18 months earlier, and more than 4 million persons were now protected in areas where malaria prevalence had been almost 75%.

The malaria eradication programme in Colombia is considered to be the most successful of the country's health activities. An agreement on the programme of the campaign was concluded with WHO in 1956, and spraying started in 1958. The fourth spraying cycle has just ended, and it is hoped to finish the fifth cycle, thus completing the first stage of eradication, in March 1961. Eradication is expected to be achieved by 1962. Insecticide resistance has developed in some localities among certain *Anopheles*, but the question has been studied thoroughly by experts and it is hoped to overcome this difficulty. Evaluation of the campaign started with the end of the first spraying cycle, and every care is being taken to ensure that it is as complete as possible. Technical staff for the Colombian campaign has been trained with WHO assistance, and 25% of the national health budget is being devoted to the campaign. Agreements have been concluded with neighbouring countries—Venezuela, Peru, Ecuador and Panama—for joint eradication efforts, aimed in particular at freeing the Pan American Highway from malaria hazards.

In Ghana, a pilot project for the mass treatment of malaria—the country's chief cause of morbidity and mortality—with medicated salt has been planned. In India, practically the whole population of 400 million is being protected by spraying, and complete eradication of malaria is one of the aims of the country's third five-year plan which starts next year. "The plan for [malaria] eradication," said the chief of the Indian delegation, "will go down in history as one of the most fascinating endeavours on a global scale for the welfare of mankind." In Lebanon, the consolidation phase of the malaria eradication campaign has apparently been reached.

A pre-eradication survey was started in the Republic of Korea last year; the team has detected one malaria focus and it is continuing its work in an attempt to detect others. Malaria is a major problem in the Federation of Mali, and an eradication pilot project is now being carried out in areas

[1] *Off. Rec. Wld Hlth Org.*, 1960, 98

[2] *Off. Rec. Wld Hlth Org.*, 1960, 103

where infant mortality from the disease is high.

In Mexico spraying has already stopped in certain areas where transmission is considered as interrupted. The delegate of Mexico stated that the results of the eradication campaign had been even better than expected. In the years 1949-1952, the annual average mortality due to malaria had amounted to 90 per 100 000 of the population, and the disease was the country's third most frequent cause of death. By 1959, however, the death rate had decreased to 9.7 per 100 000, while morbidity decreased between 1950 and 1959 from 244.1 per 100 000 to 4.3 per 100 000.

The eradication programme in Paraguay has been in full operation since the middle of 1957, and the third spraying cycle is now under way, 147 000 dwellings having been treated with dieldrin in the first cycle, and 161 000 in the second. In Peru, excellent results have been achieved by the campaign, which started in 1957; the whole country has now been covered by spraying—the coastal area three times, the sierra twice, and the forest once.

In the Philippines, the incidence of malaria was reduced from an average of 19.08 per 1000 people at risk between 1953 and 1957 to 9.74 in 1958, and 6.80 in 1959. There has, however, been some resurgence of the disease because of dieldrin resistance, and DDT is now being used. Mortality due to malaria in Thailand has been reduced from 35 000 to 9000 deaths a year.

The delegate of Venezuela stated that his country had the largest malaria-free area of any in the tropics (400 000 km²); this was due to the country's own efforts and, as a result of its experience in malaria work, its malaria centre was one of several being used for the training of international staff for eradication programmes in other countries of the Americas.

Several countries reported the results of pre-eradication surveys, and a number of delegates paid tribute to the help received from the US International Cooperation Administration (ICA) and UNICEF, as well as from WHO, in their eradication programmes.

**Tuberculosis**

The delegate of Denmark spoke of the possibility of "eradicating" tuberculosis, at least in countries where its incidence was low and continuing to decline. He felt that there was still too much tendency to consider tuberculosis as a social disease related to bad living conditions, rather than as an infectious disease which can provoke epidemics even where living conditions are good. In the past, it had been very difficult to attack the disease directly, but the means were now available; WHO was to be congratulated on its leadership and guidance in the public health approach to the problem through mass miniature radiography, extensive BCG vaccination, large-scale treatment of early cases of tuberculosis, preventive treatment for population groups at special risk, etc.

Great interest was shown in the first results of the controlled comparison of sanatorium and domiciliary treatment of tuberculosis carried out at the Tuberculosis Chemotherapy Centre, Madras, India, under the auspices of the Government of India, WHO, and the Medical Research Council of Great Britain. From this comparison, it appeared that treatment at home gives results closely approaching those of treatment in a sanatorium. Speaking of the publicity given to this study, the delegate of Belgium considered that the value of hospitalization for tuberculosis in countries with adequate facilities should not be played down in favour of domiciliary or ambulatory treatment, which was intended principally for countries without enough beds for tuberculosis patients. This opinion was shared by the French delegation. The delegate of Israel stated that, while there was no shortage of beds for tuberculosis patients in his country, good results had been achieved there by domiciliary treatment centres attached to clinics, thus reducing the need for hospitalization. Nevertheless, he considered that further trials were indicated before domiciliary treatment was used on a wide scale. This was also the opinion of the delegates of Iraq and Poland. The delegate of Ecuador considered that the home treat-

ment method was inadvisable except where advanced social welfare services were available.

In Tunisia, ambulatory treatment has produced satisfactory results only in the early stages of the disease; hospitalization is in general preferred because patients are better fed, and a large proportion of the Tunisian population is undernourished. The findings of the Madras study were welcomed by the representative of Nigeria, which, as an economically less developed country, is faced with the problem of a high tuberculosis incidence, shortage of hospital beds, and gross overcrowding. There is never enough room in Nigerian hospitals for more than 25% of the cases detected, and home treatment has on the whole proved more successful in Nigeria than not. The main problem is the acute infective case, because there is not enough room in the hospitals, and the patient cannot be successfully isolated at home. The delegates of Cuba, the Republic of Korea and Viet-Nam also spoke of hospitalization difficulties and the consequent advantages of domiciliary treatment. The delegate of Ethiopia said that the incidence of tuberculosis was so high in his country that hospital treatment for every case would absorb not only the budget of the Ministry of Health, but that of the whole Government.

Case-finding was also discussed. The delegate of the Netherlands considered that, in a country like his own with a very low tuberculosis morbidity and no general BCG vaccination programme, X-ray examination, though it could not be dispensed with altogether, was certainly not more important than case-finding by tuberculin-testing, particularly where young people were concerned. In fact, in the Netherlands children under 16 could not legally be submitted to mass X-ray examination, but were examined for tuberculosis by mass tuberculin-testing. The delegate of China (Taiwan) stressed the general usefulness of sputum investigation for mycobacteria; this simple procedure had enabled much valuable information to be collected in his country. In the opinion of the delegate of Iran, tuberculin-testing alone is not sufficient for diagnosis, but X-ray examinations should be confined to those for whom the result of the test was positive. The delegate of the Federal Republic of Germany said that the tuberculosis control programme there would in future be based on mass case-finding by means of X-ray examinations starting at the age of 15; the campaigns so far carried out show an extremely high incidence rate among the aged and future work would be directed towards that group.

After referring to the antituberculosis campaign now in progress in Turkey with help from WHO and UNICEF, the delegate of Turkey praised WHO's work in this field and in particular the studies started in 1958 to determine the type of freeze-dried BCG vaccine most suitable for use in unfavourable climatic conditions.

Details on tuberculosis control activities were given by a number of delegates. In Cuba, for example, some 200 000 X-rays were taken in 1959, and approximately 500 000 would be taken in 1960; 119 000 vaccinations were carried out in 1959, and 67 000 during the first quarter of 1960. In India, tuberculosis is the most formidable health problem next to malaria; what was perhaps the largest mass BCG campaign ever undertaken has been carried out there and is now in its maintenance stage. Attempts are being made to stabilize antituberculosis work by establishing a network of well-equipped clinics, while a National Tuberculosis Institute has been set up in Bangalore, with WHO assistance.

Once the first cause of death in Japan, tuberculosis is now the sixth; the delegate of Japan gave much of the credit for this to preventive measures employing BCG, though chemotherapy has also played a part.

In the tuberculosis control programme in Thailand, 1 200 000 people have been tuberculin tested and 500 000 vaccinated; a pilot project covering case-finding, chemotherapy and epidemiology has been undertaken in Bangkok. Tuberculosis is the most important medico-social problem in Tunisia. During a campaign started with WHO and UNICEF help in 1959, 90 000 people have been vaccinated with BCG, and 350 000 examined by X-ray; in the areas so far covered by the

programme, there was a 4% prevalence of tuberculosis and half the cases required chemotherapy.

The delegate of Afghanistan spoke of his country's successful tuberculosis control and treatment centre, which also serves as a training centre. A preliminary survey in Libya is expected to be completed by the end of this year, and country-wide tuberculosis control programmes will then be launched. In Viet-Nam, some tuberculosis dispensaries have been established, and it is hoped to start a mass case-finding programme shortly.

Tuberculosis is still a serious—and, in some cases, a growing—problem in certain African countries. It was practically unknown fifteen years ago in the territories comprising the Federation of Mali, but is now on the increase there: in Dakar, for example, 15% of children tested with tuberculin at 3 years of age were positive, and 14% of deaths among children cared for by the city's paediatric service are due to tuberculosis. In the Republic of Upper Volta, tuberculosis is a particularly serious problem, but the means for combating it are practically nil. A systematic campaign against the disease is due to begin in the Republic of Niger this year, though the financial problem of providing the necessary X-ray equipment has still to be solved.

**The filariases**

While welcoming the Director-General's decision to include studies on onchocerciasis in WHO's programme, the delegate of Guatemala considered that one or more permanent centres for research on the disease should be established in the Americas. Onchocerciasis was of great social and economic importance in Guatemala, not only because of its incapacitating effects, but also because it discouraged settlement in potentially fertile districts. Though great efforts had been made to control it, the Guatemalan health authorities had only found it possible so far to reduce the prevalence of blindness among affected persons by the removal of onchocercal nodules, but not to reduce the incidence of infection in endemic zones or prevent the spread of the disease to new areas. It was interesting to note that, alongside the newly infected areas, there were others where, despite apparently identical climatic and entomological conditions, no cases had been reported. There were, in fact, many unanswered questions concerning the epidemiology and pathology of the disease which called for concerted investigation. Experience in Africa, as well as the pilot projects in Guatemala and Mexico, had shown that, while it was possible to achieve control or even eradication of the vectors, this must be supplemented by the mass treatment of cases. His country could not afford to undertake such a programme alone and hoped for more assistance from UNICEF and WHO.

The United Kingdom delegate thought that onchocerciasis should be given greater priority in the work of WHO. While there had been some diminution of incidence in East Africa and the Belgian Congo, it was spreading at an alarming rate in other parts of the world. Moreover, its manifestations were widely varied. In some parts there were villages where it caused blindness in up to 60% or 70% of cases, whereas in others there were no ocular symptoms whatsoever. In Aden, for example, manifestations of the disease never came more than halfway up the thigh, although the causative agent appeared to be the same as in other places where the manifestations took an entirely different form.

The delegate of Venezuela also thought that investigations of onchocerciasis should be extended. The distribution of the disease in his own country was not yet fully known, but foci had been found in 11 of the 20 provinces, suggesting that it was widely disseminated.

Representatives of several African countries and territories spoke of the ravages of onchocerciasis. In the Federation of Mali, up to 90% of the population in certain villages are affected; in some villages of the Republic of Upper Volta a third of the inhabitants are blind as a result of the disease. It is spreading widely in Sudan and has caused the desertion of whole areas by the

population; surveys of the problem have been undertaken there and in Angola.

French and Belgian delegates stressed the need for further research on onchocerciasis covering such aspects as the biology of the vectors, the pathogenicity of the ocular lesions, and treatment.

The delegates of China (Taiwan) and Malaya expressed the hope that WHO would give more attention to filariasis. The Indian health authorities are also much concerned with this disease, and have embarked on control measures with help from ICA.

In his summing up of the discussions on communicable diseases by the Assembly's Committee on Programme and Budget, Dr P. M. Kaul, Assistant Director-General of WHO, said that large-scale campaigns against onchocerciasis and filariasis are not practicable for the Organization at the moment, since much more information on these diseases is needed for their effective control. WHO has, however, sponsored investigations to ascertain why onchocerciasis produces blindness in some cases and not in others, and further research and field studies in connexion with the disease are included in the 1961 programme. During the discussions, the WHO Regional Director for Africa announced that a second regional conference on onchocerciasis has been planned for 1961.

**Smallpox**

Transport difficulties were mentioned by several delegates as major obstacles to the achievement of certain smallpox eradication campaigns. While more than a million persons were vaccinated in Afghanistan last year, the relative inaccessibility of many communities is hindering rapid coverage; a vaccination plan extending over five years has therefore been adopted. The launching of a smallpox eradication campaign in Ethiopia has been held up, one of the reasons being the lack of a vaccine suitable for delivery to remote and hot areas without any proper transport facilities. In Indonesia, there is a shortage of transport, and cases of smallpox still occur in inaccessible parts of the country. The eradication campaign planned by the Indonesian authorities has therefore been postponed for two or three years, but it is hoped that, with the help of an epidemiologist provided by WHO, the disease will be controlled to such an extent during 1960 that a costly eradication campaign will be unnecessary. Approximately 600 cases a month are reported in the eastern part of what was formerly French West Africa; here too operations are rendered difficult by poor communications.

The difficulty of preserving the potency of the vaccine lymph has been overcome in Nigeria by the use of dried vaccine. In the opinion of the representative of Nigeria, it should be possible to eradicate smallpox in West Africa by the end of 1965 with this vaccine. He was convinced that if WHO would give some help all the governments in the area would co-operate. His Government would be able to supply the necessary dried vaccine if given sufficient time to expand production. The Government of Jordan is also prepared to help countries undertaking smallpox eradication by offering 2 million doses of vaccine each year for distribution by WHO.

A high degree of immunization against smallpox has been maintained in Cambodia through yearly mass vaccination campaigns in 13 provinces. An intensive vaccination programme with the aim of eradicating smallpox within three or four years has been undertaken in India, the coverage for the current year being about 15 million. In Iran, the eradication programme is well advanced; mobile vaccination teams are starting on their second nation-wide coverage. In Lebanon, under a law promulgated in June 1959, vaccination against smallpox every four years has been made compulsory. The delegate of Mexico stated that eradication of the disease from his country has now been achieved. Eradication started in Paraguay in April 1958, and by February 1960 99% of the population had been vaccinated.

The fifth consecutive year without a smallpox case has now passed in Peru; vaccination is compulsory and the vaccine is manufactured locally. In Viet-Nam, 5000 cases of smallpox were declared in 1954; in 1959 there were

only 12, and no new cases have been reported since April of that year.

**Leprosy**

A representative of Cameroun stated that the leprosy situation in his country is fairly good; 28 000 cases are being treated out of the 33 000 reported. In the Central African Republic, 65 000 persons, or about 6% of the population, are affected by leprosy, but the prevalence has started to decrease as the result of a campaign undertaken with UNICEF help. It is hoped that the disease will cease to be a problem in the Republic by 1965.

The leprosy campaign started with help from WHO and UNICEF in the territory of what is now the Republic of the Congo will be continued at least until 1962. The campaign has already yielded excellent results; the number of arrested cases and cases under observation now considerably exceeds the number of new cases being reported. The organization of leprosy control in Ghana has been improved, and the results are a striking example to the public of what health campaigns can achieve.

On 31 December 1959, there were 110 129 known cases of leprosy in the Federation of Mali. Of these, 16 773 were discovered during 1959, when 990 000 inhabitants were examined for the disease. About 55 000 of these cases are being treated with sulfones by WHO and UNICEF teams. In Mozambique, 59 000 leprosy cases, or 90% of the known cases, are being treated. In the Republic of the Niger, a programme of leprosy control, almost entirely by domiciliary administration of sulfones, is being successfully pursued with WHO technical aid and UNICEF transport. A WHO leprosy consultant visiting Portuguese Guinea has reported favourably on the measures being taken there against the disease: of an estimated 20 000 cases, 13 000 are now receiving treatment, and a special leprosy service was recently established.

The delegate of Argentina expressed satisfaction at the important place given to leprosy in the Director-General's report; the Argentine National Congress, he said, is about to examine a series of new legal provisions to ensure more humane and scientific treatment for leprosy sufferers. In Colombia, too, special legislation is being passed to abolish the segregation of leprosy patients.

In the past, very few cases of leprosy were reported in Guatemala, so that the problem had never been taken up very seriously. However, since a leprosy section has been set up in the Communicable Diseases Division of the General Directorate of Health, many unsuspected cases have come to light. The delegate of Guatemala therefore suggested that it might be useful to set up leprosy sections in those countries where they do not already exist. In Paraguay, about 600 000 persons have been examined in a leprosy case-finding campaign which revealed a prevalence of about 2 cases per 1000 inhabitants. Treatment and control of patients and their families are being carried out by the health services, and ambulatory treatment has been substituted for compulsory segregation in hospitals.

The delegate of Afghanistan said that his Government was particularly concerned about the 2000 cases of leprosy in his country, and hoped that it would be possible to undertake a survey of the problem with WHO help. In India, extensive measures for the control of leprosy are being taken under the Government's second five-year plan. There are at present 100 leprosy control units in those parts of the country where the disease is highly prevalent, in addition to a large number of private institutions which have been in existence for many years; 12 000 000 people have been examined for leprosy, and 80 000 cases found among them. A central institute for training and research in leprosy has been established. Preliminary results with chemotherapy have led Indian health authorities to hope that it may be possible to prevent the spread of leprosy among children; this would be a very important step forward in the control of the disease. The delegate of India hoped that WHO would help to investigate the results of BCG vaccination for leprosy. He also suggested that measures be studied for preventing the occurrence of leprosy deformities.

**Bilharziasis**

The delegate of Iraq said that bilharziasis was still a major problem in his country. In spite of the different methods used no satisfactory results had yet been achieved in controlling the snails and interrupting transmission. With new irrigation projects, there was an increased possibility that the disease might spread. This problem might be solved by environmental sanitation and health education, but these were both long-range programmes. The problem was very real for Iraq and other countries in the same region, and he therefore hoped that research would be continued and more fellowships awarded in this field. Further research on bilharziasis was also urged by the delegates of the United Kingdom and Nigeria.

Representatives of two new African republics spoke of the bilharziasis problem in their countries. In the Federation of Mali, the disease affects 15.1% of children between 1 and 4 years of age, 47.2% of children of school age, and 25.5% of adults, while in the Republic of Upper Volta more than 90% of the children in certain areas are infected.

**Treponematoses**

Successes in campaigns against the treponematoses were reported from a number of countries. The yaws campaign in Haiti is now in its concluding stages; before 1947 the great majority of the country's rural population had been affected by the disease, but no more than 300 acute cases were reported at the end of 1959. A survey covering 2.3% of the population has led to the discovery of new cases, which are now being treated. A further survey during 1960 is expected to lead to the announcement that the disease has been eradicated from Haiti. In Nigeria, the yaws campaign has reached the consolidation stage; up to the end of 1959, some 18 000 000 examinations were carried out and some 6 500 000 people treated. The Nigerian yaws teams have been trained to search not only for yaws, but also for leprosy, sleeping sickness, enlarged spleens, malnutrition and bilharziasis, and to carry out smallpox vaccination.

In the Thailand yaws control programme,[3] 18 000 000 examinations have been made and 1 300 000 people given treatment for the disease. The authorities of Thailand wish to co-operate with the authorities of adjacent countries in preventing the spread of yaws in frontier regions.

A yaws campaign started in Cambodia in 1959, and in January 1960 another started in the Republic of the Congo, where the disease is tending to develop in the forest regions. A mass campaign against the treponematoses started in the Federation of Mali at the beginning of this year; it is expected that, by the end of the year, every member of the population will have been examined twice.

The mass treatment of endemic nonvenereal syphilis has started in Iraq after a survey showed that more than half a million people in the country were affected. The delegate of Mexico announced that a campaign had been started in his country for the eradication of pinta, a treponematosis which is less aggressive than yaws but nevertheless affects some 300 000 of Mexico's rural inhabitants.

**Poliomyelitis**

The delegate of Belgium spoke of live poliovirus vaccination in the Belgian Congo, where this method was used as long ago as 1957. Of 46 000 children under 5 years of age who had been vaccinated with type 1 virus, 3400 had not had antibodies before vaccination: tests carried out six months after vaccination had shown that 60% of them had acquired antibodies. This relatively disappointing result led to the conclusion that, in some cases, the vaccination had been inhibited by the presence in the intestinal tract at an early age of various types of enterovirus. It would therefore seem necessary to institute research to find out whether it would not be advisable, in areas where hygienic conditions are still rudimentary, to vaccinate children a few days after birth. It might also be advisable to conduct further research on the dissemination

[3] See also article on page 318.

of the virus through the agency of those who have been vaccinated.

Poliomyelitis is now one of the leading health problems in Mexico; studies are going on there on both live and inactivated vaccines and it is hoped to make the findings available to PAHO (the Pan American Health Organization) and to WHO. In Albania, oral vaccination with the Sabin live vaccine is being given to all children this year. The delegate of Iran stated that his country would sooner or later have to launch an immunization programme, and from the administrative point of view it would be most practical and economical to use live vaccine, administered orally. He therefore hoped that WHO would pursue research on this subject.

Although the use of inactivated vaccine in Israel in 1958 proved a partial failure, the vaccine protected nearly 60% of the children concerned. Since then, steps have been taken to strengthen the type 1 component of the vaccine to ensure its adequate potency. In 1959, only 36 cases of poliomyelitis occurred in Israel, 25 of them in unvaccinated persons. All children born in 1959 have been given full protection, and field trials of live vaccine are in progress.

### Communicable eye diseases

The delegate of Tunisia gave details on the campaign against communicable eye diseases which started in the south of the country in 1954, and has since been extended progressively to the north. This WHO-assisted campaign comprises a school programme and a mass programme against seasonal conjunctivitis. In 1959, the school programme was in operation in all the country's schools, and 380 000 children were treated; all school nursing staff have to take special training in the treatment of eye diseases. The mass programme against seasonal epidemic conjunctivitis will reach 1 400 000 persons in 1960 and 1 900 000—more than half the population of Tunisia—in 1961. By 1963 the whole population should have been treated. In connexion with the campaign, the Tunisian Government has made ophthalmic ointment available throughout the country at a fixed, reduced price.

During 1959, a million persons were treated in the WHO-assisted campaign against communicable eye diseases in Morocco. The delegate of Libya said that trachoma was one of the principal health problems in his country, and that it was hoped to organize country-wide control projects with the help of WHO. It is hoped to start a similar control programme this year in Iraq, where some 400 000 persons are estimated to be suffering from trachoma.

During discussions on work in the regions, the WHO Regional Director for the Western Pacific stated that an evaluation and research pilot project has been planned in connexion with the WHO-assisted mass trachoma campaign in China (Taiwan). It is hoped that the results of the study will be of value not only to Taiwan, but to other countries and regions where trachoma is still a problem.

### Atomic energy and radiation

The delegates of a number of countries called attention to the hazards presented to the health of the world by tests of atomic weapons, and expressed the hope that something would be done to end such tests.

The delegate of Colombia gave details on his country's policy with regard to the problem of ionizing radiation. An Institute of Nuclear Energy has been set up and the Ministry of Health has submitted a draft law to the Supreme Council of the Republic to cover all health problems connected with radiation. A national committee for radiological protection will be set up to advise the Ministry of Health. Maximum permissible doses will be established in compliance with the standards of the International Commission on Radiological Protection. All persons using X-ray equipment, radium, radioactive isotopes, etc. will be required to have a licence, and the Ministry of Health will have the power to confiscate equipment in the case of violation of the regulations. The delegate of Austria also announced that

a law on radiation protection had been prepared by his Government.

The delegate of Switzerland said that there had been a certain amount of opposition in his country to mass X-ray examinations; many parents had heard of possible genetic dangers and school doctors were apprehensive about the examination of very young children. It had been unanimously recognized that the radiation dosages should be kept as low as possible, and that X-ray examinations of younger children often yielded very little information. There was nevertheless a divergence of opinion on the subject among Swiss doctors, and it was hoped that WHO would do something to clarify the problem.

### Public health services

The discussions on public health services covered an extremely wide range of subjects. They made it clear that the principle of integrating preventive and curative services and the importance of health services in community development programmes are now generally accepted. The importance of integrating maternal and child health services into the general public health services was also stressed by several delegates.

Many speakers commented on WHO's work in mental health, and in particular on the epidemiological studies that have been in progress for the past two years and are expected to continue for some time to come. The need for defining the scope of mental health problems was emphasized.

The question of the recruitment and training of nurses continues to preoccupy the public health authorities of the different countries. Close attention is being given to programmes for the training of nursing auxiliaries to fill the gap until nursing services are fully staffed.

Further research into the epidemiology of dental caries was called for, and continued interest was shown in the fluoridation of water supplies as a means of promoting better dental health.

Extensive details were given by delegates on the organization and development of the various national public health services, including maternal and child health, health education and nutrition services.

### Education and training

Two points emerged during the discussions on education and training: the need for an intensification of public health training at the post-graduate level, and the need for training more students in the environment in which they will subsequently have to work.

In Poland, doctors working outside the larger hospitals can take refresher courses every four years. The length of the courses is three months, and results have been very good. Similar courses are provided in Bulgaria. In Paraguay, public health courses are given to doctors, nurses, dentists and other health workers already in service. In Venezuela, university medical training is followed by field work interspersed with courses in public health. The principle of having special public health training for doctors was generally endorsed by the delegates.

The delegate of Yugoslavia considered that, in the provisions for fellowships, care should be taken to give fellows training in conditions similar to those prevailing in their own countries; in particular, there should be more direct exchanges between countries where conditions are comparable.

A large number of speakers gave details on the development of education and training programmes and institutions in their respective countries. An interesting development reported from Argentina is the establishment of secondary school health courses covering such subjects as health education, laboratory work and radiology.

In the USSR, special attention is being paid to the training of auxiliary staff for domiciliary care in the proportion of about four auxiliaries for each doctor. These auxiliaries concentrate on health education and preventive work, thus facilitating the task of the doctors and other health staff.

The delegate of France thought that more attention should be given to the ethical and social instruction of the medical student; at least one French university devotes most of

the student's first year to that side of his education. The United States delegate stressed the need for more mutual understanding and joint action among the various professional disciplines involved in health work, e.g., the nurse, the doctor and the nutritionist, or the doctor, the educator and the nurse. More use might be made, he considered, of team training of workers in various disciplines.

## INTERNATIONAL QUARANTINE PROBLEMS

The International Sanitary Regulations adopted by the Fourth World Health Assembly in 1951 revised and consolidated provisions contained in 13 international sanitary conventions and treaties, with the aim of ensuring the maximum security against the international spread of diseases with the minimum interference with world traffic. The application of the Regulations is no simple matter, since nearly all countries and territories are parties to them, with or without reservations. A Committee on International Quarantine was accordingly set up by WHO to deal with the problems that must inevitably arise in their application in the changing world epidemiological situation and in the light of the different attitudes of States to their sanitary needs. This Committee held its seventh meeting in October 1959, and its report was submitted to the Thirteenth World Health Assembly.[1]

Special provisions are laid down in the International Sanitary Regulations for six quarantinable diseases: plague, cholera, yellow fever, smallpox, typhus, and relapsing fever. There has been a dramatic change in the world situation of plague in the last 8 years: in 1950 about 44 000 cases were reported; in 1958 only 271. The disease still exists as sylvatic plague, and human cases are restricted to inland areas and persons who have close contacts with wild rodents. Thus the US Government reported 3 cases of bubonic plague in isolated areas where rodent plague is endemic: cases, however, of no significance to international traffic. The first 2 cases occurred in the State of California within a hundred miles of each other: one an 11-year-old boy infected on a camping trip who gave a history of flea bites while in camp; the other a veterinarian. These cases were unrelated, and both recovered. The third case, a fatal one, was a 12-year-old girl in New Mexico whose probable source of infection was a jack rabbit.

Since June 1958 no ports where plague exists or is suspected to exist have been listed in the world. The US Government therefore suggested that as the incidence of plague is showing a downward trend the provisions in the Regulations on plague should be revised. The Committee decided not to make any recommendations to that effect as yet, but thought that Member States might consider the possibility of bilateral agreements to waive or relax these provisions.

The International Air Transport Association submitted to the Committee its opinion that the provisions on yellow fever would work satisfactorily if only they were implemented. Difficulties—it held—are caused not by the Regulations themselves but by the reservations made by some countries. Thus, for example, India and Pakistan require information from passengers arriving in their countries about their movements in the 9 days prior to arrival. This reservation to Article 100 of the Regulations (which states that no sanitary document shall be required in international traffic other than those provided for in the Regulations) should—the Association felt—apply to passengers from an infected local area who are unable to produce valid vaccination certificates, but in practice it is applied to all passengers arriving from the west even if they have valid vaccination certificates or have not been to an infected local area. Under Article 73 of the Regulations, too, countries may accept aircraft disinsecting when per-

[1] *Off. Rec. Wld Hlth Org.*, 1960, 102 (Annex 1)

formed in flight, but this procedure is not acceptable to some countries, which require spraying to be performed on arrival, to the great discomfort of the passengers.

The Committee met the first of these objections by pointing out that the reservation made by India and Pakistan to Article 100 permitted the health authorities of the two countries to require information of *all* persons on an international voyage about their movements during the 9 days prior to disembarkation. It followed that the airlines should make this position clear to all their passengers to these countries. As for the second objection, concerning Article 73, the opinion of the WHO Expert Committee on Insecticides is that disinsecting in flight cannot, for technical reasons, be recognized at present. However, work in progress on the problem of disinsecting aircraft efficiently and without disturbing the passengers might shortly change the picture and remove this objection. In India, too, an experiment is contemplated whereby aircraft will still be sprayed on the ground but passengers will be allowed to disembark straightaway.

Another problem raised by the International Air Transport Association is that of the aircraft passenger arriving in India without a valid yellow fever certificate, in an aircraft that cannot present proof that it has been properly disinsected before arrival in India. India and Pakistan accept disinsectization certificates from certain countries only; and the passenger may have passed through so many countries since he left a yellow fever area that he has mislaid his certificate because it had ceased being required, or he may even not have been anywhere near a yellow fever area. Whatever the position, the passenger risks being refused entry or being detained in isolation. This—the Committee agreed—is a genuine problem that is at present under discussion between the Governments concerned and WHO. The Committee also pointed out the benefits to health administrations of yellow fever receptive areas of keeping the area within the perimeter of every airport free from *Aëdes aegypti* in its larval and adult stages, in accordance with Article 20 of the Regulations.

The Government of India informed the Committee that infants and young children leaving a yellow fever infected area within 9 days before arrival in India are often not vaccinated against the disease. They are therefore kept in isolation for 9 days from the date of last possible exposure to infection. This practice is objected to by the Government of Uganda, between which country and India there is considerable passenger traffic. The Uganda Government based its objection on expert medical opinion in East Africa and the United Kingdom to the effect that vaccination should be postponed till at least the age of 6 months and preferably 1 year because of the risk of encephalitis; and on the further point that the vaccinator, even if ready to take the risk of vaccinating against yellow fever, may still wish to follow the medical view that at least 21 days should elapse between smallpox vaccination and yellow fever vaccination of infants—whom parents travelling to India often take with them even if only a few days old. This objection was supported by the Kenya Government, which pointed out that it had excepted children under 1 year old from the requirement that that they be vaccinated against yellow fever and cholera before entering Kenya. The question of a relaxation of this requirement has been raised with the Indian Government.

Cases were reported throughout the year of smallpox infection being carried from one country to another by international transport. Ten cases occurred in Aden Colony and 122 in Aden Protectorate (with 33 deaths), the infection having been introduced from Yemen. In Ceylon there were 27 cases (with 2 deaths) in a village 2 miles from a port where boats from India occasionally call and unload cargo. The first case was admitted to hospital, but refused to stay there; the other cases occurred among his friends and relatives. Between 4 December 1958 and 21 January 1959 there were 18 cases of smallpox at Heidelberg and 1 at Kaiserslauten in the Federal Republic of Germany. The outbreak was caused by a German doctor who fell ill before he left India and who flew home via Colombo, Geneva and Zurich, taking the train from Zurich on to Heidelberg. Among

the secondary cases were 6 physicians, 2 nurses and other members of the hospital staff, 2 female patients, the charwoman of the primary case, and a barkeeper from Kaiserslauten who was infected at Heidelberg. Two patients died. Three cases occurred in Ghana: one of a Liberian who developed the disease two days after arrival by ship in Accra; another of a woman who came from Togo before her rash had healed; and the third of her husband. Three known cases occurred in Iran, of persons who had crossed the border at other than the official crossing-points. From Malaya were reported 4 imported cases, of Indians disembarking from a ship at Penang. Other cases were reported from Pakistan, the Philippines, the United Arab Republic, and the United Kingdom. Noting the numerous instances of imported smallpox and the subsequent epidemics produced in some countries, the Committee stressed the need for the use of potent vaccines, for correct vaccination procedures, and for medical and other personnel coming into contact with travellers maintaining a high level of immunity against smallpox by repeated vaccination. It also drew attention to the advantages of dried smallpox vaccine and to the arrangements made for its supply in several WHO Regions.

The Government of Spain reported the occurrence of one fatal case of typhus, presumably contracted in France. Cases also occurred in Algiers and in Jordan. The first of these was a Moroccan pilgrim returning from Jeddah; he was kept in Algiers till he recovered, then repatriated, the Moroccan authorities being informed in accordance with Article 104 of the Regulations.

Article 103 of the Regulations allows States to impose additional sanitary measures on migrants, seasonal workers or persons taking part in periodic mass congregations. Basing itself on this provision, the Government of Saudi Arabia laid down that all arrivals from cholera-infected areas must produce a vaccination certificate against cholera showing 2 injections at one-week intervals; if 5 days had not elapsed since they left those areas they would be isolated. During the annual Mecca Pilgrimage season all travellers coming from any area, cholera-infected or not, must produce this same certificate. These requirements, and a measure relating to smallpox, led to a report from the Kenya Government of inconvenience caused at Nairobi Airport because of lack of knowledge of what was needed in Saudi Arabia. The Committee appreciated the difficulties involved in the sanitary control of the Mecca Pilgrimage, and hoped that information about new measures would be given to WHO early enough to be passed to other health administrations in good time.

The price of keeping the world as free as possible from these deadly diseases is unremitting vigilance. The cases of smallpox that have occurred show how easy it is for an outbreak to start and how important it is not to relax the control established by the International Sanitary Regulations. These Regulations, the fruit of years of discussion and treaty-making by the nations, have been amended by World Health Assemblies, in 1955, 1956 and 1960; and are constantly being reviewed by the Committee on International Quarantine in the light of changing events in the field of the quarantinable diseases.

# THE CONTROL OF NARCOTIC DRUGS

*Since its foundation, WHO has played an important part in the control of narcotic drugs, by advising on the medical aspects of drug addiction and addiction-producing drugs.*[1] *Speaking at the Thirteenth World Health Assembly on the subject of the draft Single Convention on Narcotic Drugs, Mr. G. Yates, Director of the Division of Narcotic Drugs of the United Nations, briefly reviewed developments in international narcotics control. His statement is reproduced below.*

[The Single Convention on Narcotic Drugs], which consolidates and partly revises the nine existing narcotics treaties, will be finally drawn up and signed at a plenipotentiary conference which will be held in New York early in 1961. Since this plenipotentiary conference will be the last stage of a long and intricate task in which WHO has taken a full share, and since it will constitute something of a landmark in this subject, there are a few comments that might appropriately be made at this time.

The international narcotics control system embodied in the treaties is one of the oldest international economic and social activities, having got going, in fact, at a conference called as long ago as 1909 in Shanghai at the instance of President Theodore Roosevelt of the United States of America. Not unnaturally, this system has in some respects rather an old-fashioned look now, being based essentially on ... specific obligations undertaken by governments towards each other, rather than on the system of support, or technical assistance in the wide sense, which is now the typical *modus operandi* of international organizations. However, it provided one of the earliest examples of an international secretariat being entrusted with administrative responsibilities, and not simply study functions, on behalf of the participating governments.

On one side of the work, namely, that of regulating the medical or legal trade in narcotics in such a way that a minimum is overproduced or is available to leak into the illicit traffic, the system has, on the whole, been largely successful. On the other side, that is, the enforcement work of police, customs and excise and similar services, which operate directly against the illicit traffic, the situation has certainly improved as compared with former times, but we have still a long way to go.

We are often asked in the United Nations why it is that the intergovernmental narcotics body and its secretariat is part of the United Nations and not part of WHO, and, of course, this question was considered at the time the San Francisco Charter was being drawn up. The treaty system endeavours to reconcile the requirements on the one hand of a satisfactory supply of narcotics for medical use—and this has both a public health and a commercial side—with, on the other hand, the police requirements of combating a traffic that is a major public nuisance as well as an economic burden in a number of countries. For this reason, the governments at San Francisco decided to place the function in a general international organization, and up to now this view has continued to prevail.

The unit concerned in the United Nations Secretariat was transferred from New York to Geneva in 1955, one of the main reasons for this move being to be nearer WHO, and in fact the unit does enjoy very close relations with the WHO Secretariat.

The present time marks a turning point in the subject of drug addiction and narcotics control in a number of ways which may be signalized shortly by reference to the following features—and these are the features in the situation, of course, which will underlie the work of the plenipotentiary conference at the beginning of next year.

[1] See *WHO Chronicle*, 1959, 13, 441.

The first feature of the United Nations/WHO period, so to speak, is the increasing and now very widespread acceptance of the view that an addict should be regarded as a patient rather than a criminal. In fact, the change in this respect is now getting so well established that it is occasionally necessary to remind a public health department that an addict can sometimes be a criminal as well as a patient.

Second feature—it is still necessary to bear in mind that drug addiction continues to be a large-scale public health problem, although, of course, a much lesser one than malaria, tuberculosis, and some others which you have been considering. But it is still well up in the secondary group. There are still in the world millions of addicts to opium and opiates, there are still millions of habitual cannabis users (the term " cannabis " being used to cover all forms of this substance such as hashish, charas, bhang, ganja, dagga, taima, djamba, maconha, marihuana, kif, takrouri, hemp, kamonga, and so on) and there are still millions of coca leaf chewers. This year's paper on the incidence of drug addiction in the world prepared for the United Nations Narcotics Commission showed 29 countries or non-self-governing territories with an addiction rate of more than one addict per 1000 population, and 21 further countries with a rate of at least one addict per 5000 population. Unfortunately also, some of the worst forms of addiction, and particularly addiction to heroin, are gaining ground, and gaining ground in some relatively underdeveloped countries as well as in more advanced ones.

Third feature—the economic loss involved in addiction and its problems is now being more generally recognized. The federal authorities in the United States of America, for example, some little time ago estimated that the annual loss attributable to the narcotics problem in their country was of the order of $500 million a year.

Fourthly, the prognosis of addiction is now more optimistic than it used to be, at any rate in the numerically largest sector. While the individual addict whose addiction is a sign of severe personality defects still remains a very difficult patient, the distinction has increasingly come to be made between this kind of addiction and what is usually now called " mass " or " social " addiction. In " mass " or " social " addiction the taking of the drug, in the words of one of [WHO's] expert groups, is " mainly due to social, environmental or cultural factors. Among these may be included the historical and cultural acceptance of the use of certain drugs by some segments of the population ... This group would comprise those persons who are exposed to some more or less accidental stress, such as exhaustion, hunger or poverty, and would predominate in countries where the drugs used are relatively easily available and the cost is not prohibitive." In fact, as regards " mass " or " social " addiction, the experience of Iran since 1955 has been nothing less than decisive for this situation occurring anywhere in the world.

Many of you will remember how Dr Saleh, in this hall, when he was Dr Adib's predecessor as Minister of Health of Iran, described the reforms which the Iranian Government commenced in 1955 concurrently with its policy decision to discontinue the production of opium for medical purposes. The level of opium addiction, he then estimated, was something of the order of 1 in 15 to 1 in 20 of the population. The energetic measures taken by the Iranian Government changed the whole climate regarding this problem. Health education and propaganda played a major part in the reforms; great numbers of opium users ceased to be such without the necessity of specific medical treatment, although this was made available for the most serious cases. In a few short years the problem has been reduced to manageable and relatively small proportions.

The fifth feature—the typical preventive approach of public health, has been applied in this field. Only one synthetic narcotic, namely, pethidine, was in effective use in 1946, and the rapid development of synthetic narcotics caused new control and other problems. This time, however, control measures, and particularly the Paris Protocol of 1948, were taken before illicit traffic

developed, as it had done at the time of the invention of heroin and other drugs, and, in fact, synthetic drugs present at this moment no significant problem in the illicit traffic. At the same time, in a number of countries the medical profession gets information on new synthetics, including information on their dangers, before they come into general clinical use.

Sixthly, the technique of technical assistance has been superimposed on the old treaty system. A certain amount of technical assistance has been given in recent years under the Expanded Programme and the regular programmes of the United Nations and the agencies; in addition, last year the United Nations General Assembly established a supplementary fund to boost technical assistance in the field of narcotics control.

Seventh, and lastly, all medicine is, of course, interconnected, as your President reminded you in his opening remarks, and the rigid dividing lines between attitudes to "addiction-producing" narcotics proper, to "habit-forming" drugs with some but not all of the same characteristics, and to such groups of substances as barbiturates, tranquillizers, amphetamines, etc., are no longer so tightly drawn as they once were. In fact, both in the United Nations and in WHO it has been in mind that some of the machinery of narcotics control may perhaps be useful in dealing with some of the problems set by these new groups of substances.

These last-mentioned developments show that, in spite of its relatively great international age, the international narcotics control system is not yet suffering too greatly from hardening of the arteries. With the continuation of the present excellent co-operation and support of Member governments, it has still its own small contribution to make to the welfare of the international community.

## IMMUNIZATION AGAINST COMMUNICABLE DISEASES

*For some years it has been customary, on the occasion of the annual World Health Assembly, to hold technical discussions which are distinct from the official proceedings of the Assembly. The article that follows is a summary of the technical discussions held at the Thirteenth World Health Assembly. A complete report on these discussions will be published in* Public Health Papers.

The topic chosen for the technical discussions during the Thirteenth World Health Assembly was the role of immunization in communicable disease control.

Dr V. M. Zhdanov, of the USSR, who acted as general chairman, opened the discussions with a brief sketch of the uses of vaccines against the most widespread infectious diseases. Against some of these diseases vaccines are the most effective weapon available: smallpox, diphtheria, poliomyelitis, whooping-cough and in the near future, it is to be hoped, mumps. Against other diseases, such as tuberculosis and typhoid fever, immunization, although of great importance, plays only a subordinate part. Against yet another group of diseases such as brucellosis, tularemia and those transmitted by arthropods from animal reservoirs to man, vaccination is very useful for protecting those particularly exposed.

The participants then split up into nine groups, whose discussions are summarized below.

### Vaccination priorities

It was considered that each country should itself determine the priority to be given to the different immunization programmes, taking the following factors into account:

(1) The prevalence of the disease concerned, its dangers, and its economic implications. These vary greatly from one country to another and even between different areas in

one and the same country. In addition, they may vary over the course of time in a given place.

(2) The advantages of immunization programmes in comparison with other methods for controlling the disease.

(3) The efficacy of the vaccine available and the risks entailed in its use. If priority is to be given to a vaccination programme, the vaccine must be of proven efficacy and its dangers very small as compared with those of the disease attacked.

(4) The availability of the vaccine in sufficient quantities and the economic implications of the programme (costs of the vaccine, cost of training personnel, salaries, travel expenses, etc.).

(5) International aspects. These are most important; for example, even in countries where smallpox and diphtheria have been eradicated, it is necessary to continue immunization against these diseases, since they still exist elsewhere.

(6) Public demand and cultural factors.

All the groups participating in the discussions agreed that smallpox vaccination should have the greatest priority.

Special attention should also be paid to immunization against diphtheria, whooping cough and tetanus, and it is advisable to administer a triple vaccine against these illnesses. The priority given to tuberculosis vaccination depends on the prevalence of the disease. The possible prophylactic action of BCG against leprosy was mentioned and increased research into this question was advocated. The priority given poliomyelitis vaccination also varies from one country to another. It was recommended that the systematic use of live poliovirus vaccines should be preceded by a study of possible variations in the virulence of the original strains after serial passage in human beings.

In general, indications for other forms of immunization are limited and it is more difficult to lay down general rules. The groups considered that WHO should take over the co-ordination of information about new experiments and vaccination programmes and transmit it to Member countries to assist health authorities.

**Complications and side reactions to immunization**

The problem of secondary reactions to immunization was dealt with, with special reference to yellow fever, smallpox, and whooping cough vaccines. There is an evident need for research to elucidate and eliminate the causes of these reactions. Precise information on each particular case should be collected and evaluated statistically.

**Development of vaccination programmes**

A decision whether vaccination programmes should be made legally compulsory or be voluntary can only be based on the level of health education of each community. In the words of Dr Zhdanov: " It is hardly possible here to work out general recommendations applicable to all countries, since in trying to solve this question we come up against variations in social structure, historical differences, different habits and customs, and special features of the health services, which have become so varied in the different countries. One thing seems to me indisputable, and that is the general tendency to attach greater importance to the role of the population itself in carrying out an immunization programme. The higher the level of the public's medical knowledge and health education, and the closer the contact between the health services and the public, the less necessary are all kinds of restrictive and compulsory measures." An attempt should be made gradually to replace compulsion of the population by persuasion through health education, though it should be remembered that immunization is not a personal matter but concerns the whole community. Some participants pointed out the danger of misinterpretation by the public of the waiving of compulsory measures. Furthermore unforeseen situations may arise in which compulsory vaccination is essential for the protection of the community.

The organization of immunization programmes will vary according to the health

conditions of each country. In the more backward areas, mobile teams will be formed which should also be trained for other types of health work, since they will have to work in places lacking medical services. Gradually, these teams will tend to be replaced by fixed health centres situated in the larger towns. From this stage onwards the immunization programmes will remain in the hands of the public health services or of private practitioners, according to the medical organization of the country.

In most cases the cost of immunization is borne by the State. The general opinion was that this system is necessary if all socio-economic levels are to have an equal opportunity of benefiting from immunization. Apart from humanitarian considerations, this is essential if programmes are to be effective.

Two basic schedules of immunization were outlined, one for countries with adequate health services and the other for those without such services. These schedules can be modified according to local conditions.

**Production, standardization and testing of vaccines**

In the production of most biological materials the mere following of prescribed directions does not guarantee the final result. Consequently, many countries have set up suitable control laboratories for examining national and imported products. In other countries, however, control laboratories, if they exist at all, are badly equipped or are those that produce the vaccine, which is hardly a desirable situation.

Again, the quality criteria used by the various national control laboratories differ considerably; because of this WHO has established an Expert Committee on Biological Standardization with the task of recommending international minimum requirements for vaccines and similar products. It was considered that it would be of great value, particularly for many of the smaller countries, if the World Health Organization could help to make facilities available for the control testing of vaccines on an international basis. Similarly, there is a need for centralized manufacture of those vaccines that cannot readily or economically be produced on a small scale or whose production requires highly experienced personnel with special equipment. It is also urgently necessary to develop methods for the large-scale manufacture of vaccines which may be required at any given moment for the control of a major epidemic, e.g., influenza vaccine. Furthermore, it was agreed that research was necessary for the production of purer antigens, the solution of special problems raised by the application of certain vaccines in tropical areas, the continuous evaluation of the effectiveness of immunization programmes and clarification of the relationship between immune response and the public health importance of a vaccine.

**Evaluation of vaccination programmes**

During the last fifteen years procedures have been developed making it possible, through field trials, to assess the effectiveness of immunization with increasing accuracy. By carrying out combined field and laboratory studies the efficacy of future immunization programmes can be predicted. Such studies must satisfy the two basic principles of comparability and reproducibility. The first of these principles ensures that the degree of protection conferred by immunization on a given community is due to the vaccine itself and not to various chance influences. It calls for comparison of the incidence of the disease in two or more groups, identical in all respects except for the factor of vaccination. The principle of reproducibility ensures that in future vaccination programmes, the same degree of protection will be obtained for the population as was observed in the field trial. The method of vaccine production must be described with complete accuracy and the laboratory studies must include assays of different vaccine preparations in laboratory animals, in order to develop an assay method giving results that parallel those obtained in the field, thus permitting the protective value of future types of vaccine to be determined by laboratory assay alone.

Current vaccination programmes can be evaluated by means of sample surveys on the proportions and social distribution of the community immunized and on the effectiveness of the vaccination procedure as shown by skin reactions or serological tests. To assess the degree of clinical protection conferred by a vaccination programme, reliable statistics of both mortality and morbidity are needed, as well as a proper appreciation of the effect of other public health measures and social improvements.

## PROGRESS IN SMALLPOX ERADICATION

It is generally considered that smallpox can be eradicated from most endemic areas if 80% of the population is vaccinated or re-vaccinated within a period of 4-5 years. About 75 000 cases were officially reported in 1959, and although notifications were only provisional and some countries did not send in any reports it seems clear that the smallpox problem is not to be compared with that, say, of malaria. If the disease is easy to eradicate and the problem of the sheer weight of numbers of those suffering from it is not a major obstacle, why then has it not been eradicated ?

Some of the answers to this question were given in an article in the Chronicle last year.[1] It costs money to establish smallpox eradication services. The services that exist in some countries have other work to do and cannot spare the time to deal with smallpox with sufficient thoroughness. The organization of the medical services is too loose to enable a systematic attack to be made on the disease. Not enough trained staff is available. The vaccine available is sometimes unsuitable for mass vaccination, especially in tropical or semi-tropical countries. Some of these difficulties are common to all programmes in the less developed areas of the world. Others were mentioned by delegates at the Twelfth World Health Assembly. In some countries the public does not co-operate, either from ignorance, prejudice against vaccination, or apathy—apathy being a marked feature in communities that have had no smallpox for a period of years. Communications or transport facilities may be bad, or an outbreak may occur among isolated communities remote from medical aid of any kind. One delegate stressed the psychological aspect of resistance to vaccination: many of his countrymen looked upon smallpox as a punishment inflicted by God, and some blamed medicine imported from abroad. People refused vaccination with imported vaccine, and some of them deliberately infected themselves with fluid from cases. In the face of such prejudice, legislation to make vaccination compulsory would make slow headway.

A dramatic illustration of the difficulties of dealing with smallpox is furnished by the epidemic that broke out in East Pakistan in October 1957.[2] The population of this province of Pakistan is 46 million, and lives in the delta of the Ganges and Brahmaputra rivers, on land consisting of alluvial soil deposited by these rivers, much of it covered by water when the monsoon breaks. The province is criss-crossed by waterways varying from mere streams to broad meandering rivers a mile across, and boats are the easiest means of communication outside the main towns. The people are mostly Moslems, and many of the women are in purdah. The centre of village life—by far the majority of the people live in villages—is the village tank, an artificial pond where people come to bathe, wash clothes, urinate, defecate, and draw water for drinking and cooking.

In the first six months of 1958, 44 736 cases of smallpox were reported and there were 20 444 deaths. To complicate matters, an epidemic of cholera was also raging at the time, with 10 438 cases and 6684 deaths in the same period. Smallpox epidemics occur

[1] *WHO Chronicle*, 1959, **13**, 313

[2] Cockburn, T. A. (1960) *Publ. Hlth Rep. (Wash.)*, **75**, 26

every few years in East Pakistan, and vaccination is carried out on a large scale, 5 to 16 million people having been vaccinated annually from 1948 to 1957, according to the official reports. Nevertheless, this was a major epidemic.

There are only 400 sanitary inspectors in East Pakistan, i.e., about one per 100 000 population; and very few doctors and nurses in proportion to the population. In April 1958 the Chief Minister delegated responsibility for dealing with the epidemic to a citizens' committee of 60 persons, and a vast volunteer vaccination movement was begun as the medical services could not cope with the work. WHO, governments, and voluntary agencies sent vaccine and international epidemiological and vaccination teams. The Government and the epidemic control committee agreed that the objectives should be: to vaccinate 80% of the people within 6 months; to stamp out the remaining traces of infection in the subsequent 6 months; to enforce strictly the law requiring children to be vaccinated; and to make an attempt to re-vaccinate the population every few years. All kinds of volunteers were enrolled, their quality and enthusiasm naturally varying greatly; among the most successful were schoolchildren, particularly as they could visit women in purdah. Vaccination needles were in short supply, so ordinary steel needles were used and then given to the persons vaccinated—an innovation that met with approval and at the same time did away with the need for sterilization to prevent cross-infection. Vaccination techniques were naturally of the simplest.

By the middle of May 1958 40% of the population had been vaccinated, and in June 2 million were being vaccinated weekly, about 30 million in all being vaccinated in the first 6 months of 1958. The number of new cases fell from a peak of 3000 a week in May to 300 in June. By July the monsoon had come, smallpox was less severe, vaccinations had almost ceased, and the international teams were preparing to leave.

In spite of difficulties—the poor communications, the lack of staff, the transport problems, the seclusion of many of the women—one of the leaders of a team from the Communicable Disease Center, Bureau of State Services, USA, which visited East Pakistan during the epidemic, came to the conclusion [3] that eradication of smallpox from the country is feasible, even though this is one of its most strongly established endemic and epidemic foci. Widespread vaccination is needed to reduce the prevalence (Dr Usher thinks that in the more densely populated parts of East Pakistan a substantially higher percentage than 80% would be needed), and then outbreaks would be controlled by surveillance and containment.

Plans for an eradication programme have been under study in East Pakistan and it is expected that the programme will begin soon. The production of dried vaccine has started, and WHO has provided laboratory services for testing the vaccine.

In the world as a whole progress is being made. As against a total of some 248 000 cases reported in 1958, so far only 75 000 have been reported in 1959 (see Figs. 1 and 2, which should be compared with Figs. 2 and 3 in the Chronicle article referred to above). In India and Pakistan, which contain much the largest endemic foci of smallpox, the number of cases fell from 216 000 in 1958 to 51 000 in 1959; the 1958 level, however, was unusually high because of the epidemic in East Pakistan. The number of cases in Asia outside India and Pakistan fell from 30 000 in 1958 to 22 000 in 1959. In Africa, the next most affected continent, 14 000 cases were provisionally recorded in 1959 outside Liberia; in 1958 the number had been much the same, and there had been at least 5000 cases in Liberia. Some 3000 cases were recorded in the Americas, and a few cases, due to imported infection, in Europe. All cases on board ship or imported by air originated in Asia.

What developments have taken place during the year ? In India a joint meeting of the Indian Council for Medical Research and the Government Central Expert Committee was held to study smallpox and cholera. The Central Expert Committee as a result

[3] Usher, G. S. (1960) *Publ. Hlth Rep. (Wash.)*, 75, 37

FIG. 1. NOTIFICATION OF SMALLPOX CASES IN PORTS AND AIRPORTS, 1959

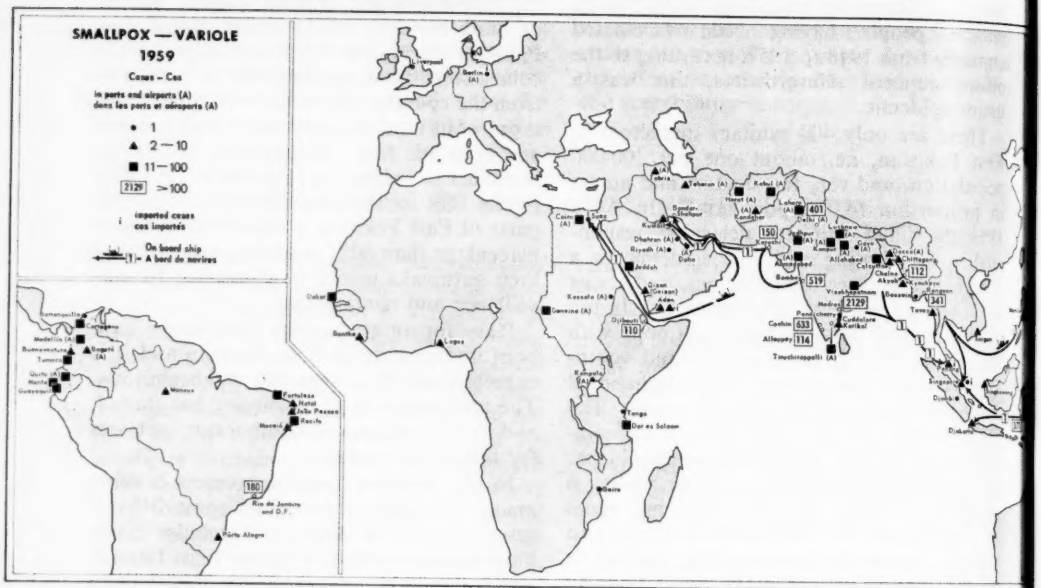
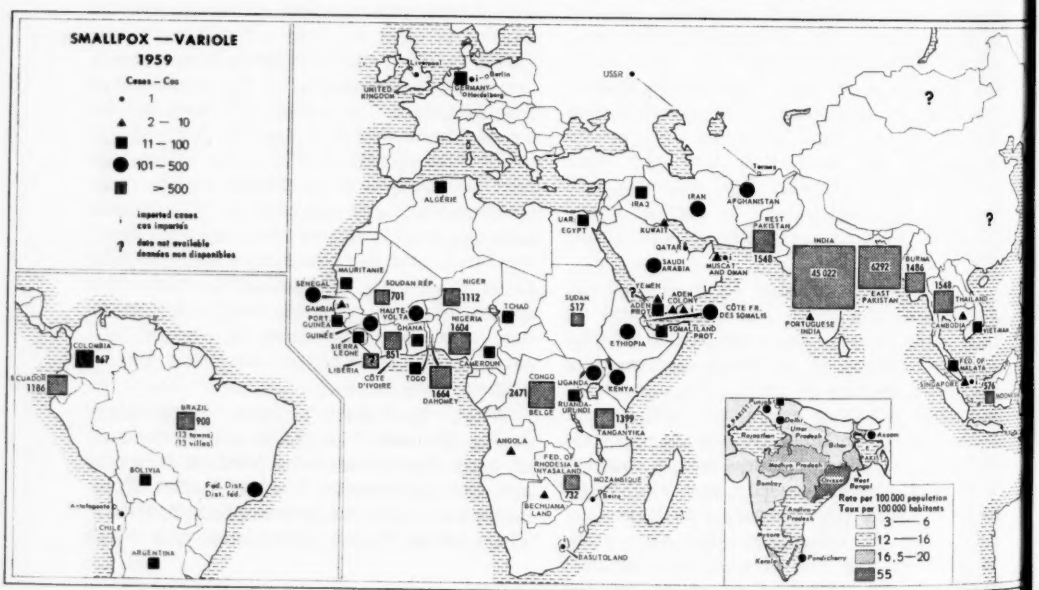



FIG. 2. NOTIFICATION OF CASES OF SMALLPOX IN 1959



recommended the launching of a national smallpox eradication campaign with the object of vaccinating the whole population, and the creation of a suitable organization equipped with the powers needed to conduct the campaign. These recommendations have been accepted by the Government of India, which has now sanctioned funds for the launching of 16 pilot projects in all the States of India. A plan for WHO/UNICEF aid in the establishment of production units for freeze-dried vaccine at two vaccine production institutes was presented to the UNICEF Executive Board in March 1960.

In the next largest endemic focus, Africa, a regional conference on smallpox eradication was organized in 1959 and attended by representatives from 20 countries of the region. A great deal of information was exchanged, and the basis was laid for national eradication campaigns and for co-operation between the various countries concerned. International assistance, it was recognized, would be needed for most African countries if they were to embark upon successful eradication campaigns. Much work against smallpox is already being done in some African countries. In the Belgian Congo, for example, about 50% of the population is vaccinated or revaccinated every year. In what were formerly French Equatorial and French West Africa, mass vaccination campaigns have been systematically carried out for many years, about 8 000 000 vaccinations being performed yearly in a total population of about 28 000 000. In Liberia vaccinations are performed at fixed centres such as clinics and schools, but the health authorities have expressed their willingness to embark upon a mass vaccination programme.

The smallpox eradication programme that was begun in the Americas in 1952 is progressing, although more slowly than was originally expected.

The situation is therefore that some countries in which smallpox used to be endemic have, through effective vaccination campaigns, succeeded in reducing the number of cases to a degree that augurs well for the possibility of eradication in the near future. Others have been active in planning and organizing eradication programmes that are expected to start in 1960. Others still are no further advanced than the planning stage, if even that. In most countries, the difficulties are mainly financial or administrative, but the expenditure on an eradication programme, it must be remembered, is small compared with the cost in money and—more important—in human lives and suffering caused by the continuous presence of a disease that can be eradicated.

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In the underdeveloped areas . . . release of the resources of the countries from the tangled undergrowth of mass disease is a prerequisite of development. Just as the Panama Canal could not be constructed until Gorgas had mastered yellow fever, so the technical resources of these countries cannot be effectively exploited until the conditions of better health have been created . . . Somehow governments will have to finance the capital requirements of health.

United Nations (1952) *Preliminary Report on the World Social Situation with Special Reference to Standards of Living*, New York

# YAWS CONTROL IN THAILAND *

*What can be achieved with modern yaws control methods has been demonstrated recently in Thailand, where only ten years ago 11 million people were living in yaws prevalence areas, the proportion of clinical cases sometimes reaching as much as 25%, corresponding to a serological infection rate of more than 60%. An antiyaws campaign was carried out in 44 provinces between 1950 and 1959. By the end of November 1959, not a single infectious case remained in 10 of these provinces, while in 33 others the percentage of cases with infectious lesions did not exceed 0.09%.*

The estimated population of Thailand is about 22 million, and there are 80 government and some non-government hospitals in the 71 provinces into which the country is divided. Only about 14% of doctors in the country work outside Bangkok. Five regional and 71 provincial health officers supervise the medical activities of their respective areas, and are in charge of the network of first- and second-class health centres spread over Thailand. The distribution of these centres is uneven, and in the areas where yaws is most prevalent there is only one health centre per 40 000 population.

The Department of Public Health in the Thai Ministry of Health has a venereal disease control division under a full-time director. This division started yaws control after the Second World War, setting up 5 mobile units, each consisting of a medical officer, a sanitary inspector, and 3 dressers. These units operated in easily accessible areas along the main roads, treating cases with arsenicals in a course of from 2 to 7 injections. In the first six months of 1948, 101 382 cases were treated; in 1949, 102 290. During this period large amounts of short-acting penicillin began to be distributed by the Government, as no long-acting penicillin was then available.

In 1949 the Government asked for WHO and UNICEF assistance, as it had become clear that no significant change had taken place in the prevalence of yaws in the country. Treatment was still being carried out with the arsenicals; long-acting penicillin was not being used; the areas treated were of limited size; latent cases and contacts were not being treated; the actual distribution of the disease and its severity in the various provinces were known only to a limited extent; and the Thai Government did not have the facilities or trained staff to cope satisfactorily with a full-scale treponematosis control programme.

As a first step in helping the Government's efforts, a WHO consultant visited Thailand and made a preliminary assessment of the yaws situation in close co-operation with Thai medical officers. It was estimated that the general prevalence of clinical yaws in most provinces was between 0.5% and 3.5%, but that there were some scattered holoendemic areas with a prevalence of as much as 25%. This corresponds to an actual infection rate of from 10% to more than 60% of the population as based on serological findings. A plan of operations was drawn up and received final approval on 21 April 1950. By December 1950 a WHO international team had arrived in the country: a medical officer, a serologist, and a public health nurse. Not less than 11 million people—half the population of the country—living in yaws prevalence areas had to be surveyed and resurveyed. The Thai Government accordingly proposed that the programme be extended, and this was approved in 1952. The purpose of the extended programme was to control yaws systematically throughout the country in areas of infection; to examine and reexamine the population in these areas, treat

* Based on an unpublished summary report prepared by WHO Headquarters, Geneva

all cases discovered, and give prophylactic treatment to their contacts; and so to reduce the reservoir of infection to the level where it was no longer a public health problem but could be controlled by the rural health services. To carry out this programme local personnel had to be trained in methods of diagnosis, treatment and control of yaws, in the administration of a mass campaign, and in public health measures for the improvement of rural health standards. When the campaign had succeeded in reducing the prevalence of yaws to a sufficiently low level, the yaws control services were to be integrated into the permanent public health services of the country.

At the outset of the WHO-assisted campaign, an intensive training programme was started. The staff of the existing mobile units were given a refresher course. In 1951 a training school was opened in Rajburi. By the end of 1958 the number of field teams had increased from 5 to 31, comprising some 250 people.

To begin with, all active and inactive cases of yaws, persons with a history of yaws, and anyone suffering from joint and bone pain were treated with 8 ml procaine penicillin G in oil with 2% aluminium monostearate (PAM); children received a reduced dose. After the First International Symposium on Yaws Control, held in Bangkok in 1952, this scheme of treatment was changed: latent cases and contacts were given 3 ml PAM, adult cases 6 ml, children aged 2-10 years 4 ml, and children one year and under 2 ml.

Between May 1950 and November 1959 a total of 8 696 775 people (58.3%) out of an estimated population of 14 927 027 inhabitants in 44 provinces were examined; of these 39 369 (0.45%) had infectious, and 411 904 (4.7%) active, lesions. A first re-survey was carried out in 33 provinces with a population of 12 592 117, and 3 819 544 persons were examined (30.3%). Infectious lesions were found in 8036 (0.21%) and active lesions in 93 814 (2.4%). In a second re-survey in 23 provinces with a population of 9 719 977, 487 persons (0.02%) with infectious, and 21 638 (1%) with active, lesions were found among the 2 119 710 (21.8%) persons examined. In a third re-survey in 8 provinces with a population of 4 392 895, 1 219 015 people, or 27.7% of the population, were examined, and 1066 (0.09%) infectious and 31 838 (2.6%) active cases were found, a higher prevalence being shown because the more straightforward method of school checking re-survey was employed. Finally, a fourth re-survey, covering 2 provinces with a population of 1 039 941, was carried out in the north-east of the country as there the prevalence of yaws had originally been highest. Up to November 1959, 557 513 people (53.6%) had been examined, of whom 495 (0.09%) had infectious and 4722 (0.8%) active lesions.

During treponematosis control activities in Thailand up to November 1959, not less than 16 412 557 examinations were made, and 49 453 infectious cases were diagnosed.

In 1953 the WHO advisers had expressed the view that yaws is a disease in recession in Thailand, because the proportion of late lesions in the population is high, active lesions are relatively rare, and there is a steep increase in the seroreactor prevalence in age groups above 7 years. Apart from the effect of the campaign, this recession is probably due to the improvement in the living standards of much of the population. Now, with the work that has been put in by the treponematosis teams, no less than 10 provinces could not muster a single infectious case in the last re-survey, and in the remaining provinces the rate of infectious lesions did not exceed 0.09% (except in one province with 0.5%). In practically all the 44 provinces, the prevalence of yaws has been reduced to such a low level that integration of antiyaws activities in the work of the rural health services is now feasible; in fact, it has begun in 4 out of the 10 provinces where there were no infectious cases.

# ENDEMIC AND EPIDEMIC GOITRE IN ITALY

The almost legendary disease of epidemic goitre reappeared in 1940 in the Italian Alps and Piedmont, attacking thousands of soldiers in the Province of Cuneo, and in subsequent years spreading to the civil population of the other provinces of Piedmont. It died out in this part of Italy in 1945, but continued to flare up in small foci in Lombardy, Liguria, Emilia, Tuscany and Venetia up to 1948.

What is known about this epidemic? We know that it appeared in an area where endemic goitre had existed for a long time; that it raged for several successive years from spring to autumn; that it affected groups or individuals coming from outside the epidemic areas, and spread to regions from which endemic goitre had disappeared decades before. This is not a fresh epidemiological observation. A French medical dictionary of the nineteenth century[1] notes under "cretinism" that: "Children and healthy adults born in countries free from goitre fairly quickly acquire goitre and become more or less cretinous when they move to endemic areas. Veritable epidemics of goitre have been reported among soldiers."

The Italian epidemic of 1945-1948 affected not only man but also dogs and pigs in some localities. At Monferrato it was shown that goitre appeared both in individuals drinking water from the mains and in those drawing their water from wells and tanks. Most of the goitres disappeared after some months, but some persisted and a few were still visible after some years. Administration of iodine brought no improvement and had no prophylactic effect.

In an article in a recent issue of the WHO Bulletin,[2] Costa & Mortara review recent work on endemic goitre and epidemics among soldiers and in the civil population of Italy. Methods of investigation have steadily developed and improved in that country, but it is not easy to find a solution to the problem of goitre.

Most of the authors who have studied the Piedmont epidemic admit a relationship between epidemic and endemic goitre. This relationship, however, has been questioned in the case of Tuscany, where epidemics without endemic goitre have been known. An analysis of recent data and of the data available on successive epidemics from 1700 on leads Mortara to the conclusion that the two forms of goitre are diagnostically identical. He emphasizes in particular the cerebral symptomatology that is clinically manifest to a greater or lesser extent in the two forms, and is inclined to the view that the central nervous system is affected, with elective, but not exclusive, localization in the autonomic centres in the diencephalon. The authors consider that the cerebral phenomena manifested in acute epidemic goitre might provide some clues to the cerebral changes that result in the cretinism and deaf-muteness of endemic goitre. An important fact is that endemic cretinism is still to be found in its old sites—the Alps and the southern Apennines, including several surrounding hill and plain areas—but does not appear in association with endemic goitre in the south of Italy. Cretins are rare in the new generations, and among them myxoedema and dwarfism due to thyroid insufficiency are less frequent.

## Research

*Epidemic goitre.* War difficulties and the comparative lack of knowledge about the symptoms of thyroid dysfunction impeded research at the time of the Piedmont epidemics. Most of the tests were normal. Neutropenia was observed with lymphocytosis, and the blood iodine level was high. No

[1] Dechambre, A., Duval, M. & Lereboullet, L. (1885) *Dictionnaire usuel des sciences médicales*, Masson, Paris

[2] Costa, A. & Mortara, M. (1960) *Bull. Wld Hlth Org.*, **22**, 493

serum antibody to human thyroglobulin was found.

*Endemic goitre.* In the Piedmont, it has been found, the uptake of radio-iodine is generally above normal in the mountain, hill, and plains foci of endemic goitre, and the iodine taken up is organically fixed in the thyroid. The excretion curve of radio-iodine is slow in comparison with that in hyperthyroidism. Thyroid clearance of iodine is high, kidney clearance usually normal. Body growth, bone maturation, and sexual development in children are the same in endemic and non-endemic areas. However, investigators cannot forget the impression of mental and physical misery in certain well-known endemic areas, where it is not rare to find individuals who are not in a condition to attend school and are unfit for social life.

*The endemic environment.* During the epidemics of goitre in the endemic area the environmental factors traditionally considered to influence the disease—water, malnutrition, deficiencies, consanguinity, and shortage of iodine—all received attention. But none of these factors seems to be responsible for endemic goitre or for the Piedmont epidemics. The epidemic spread gave rise to the hypothesis of an infectious origin, with transmission by an intermediate host favoured by hot weather—for the epidemics occurred mainly in summer. In Umbria, the heavy consumption of brassicae containing goitrogenic factors, and in mountain areas a diet lacking in proteins and in some essential amino acids were blamed. Endemic goitre is essentially rural in character, and Mortara considers that its frequent occurrence in localities where sheep are raised in stables may be more than a simple coincidence. The possible influence of radiation has not been ruled out, but radon has been sought in the atmosphere and in the water, and atmospheric radioactivity has been measured, without any relationship with endemic goitre being found. The iodine content of air and water and the excretion rate of iodine have shown no significant differences between endemic and non-endemic areas.

Goitre is not a static disease in Italy. It was widespread in the last century and the first decade of this century, then its prevalence decreased. It appears now that the descending curve has been arrested. Goitre has become more common in central and southern Italy, and has flared up in localities of northern Italy which had for some time appeared to be free from it. In certain areas the epidemics seem to have left endemic goitre in their train. The phenomenon of epidemic goitre in Italy has given rise to observations and research that are not paralleled in other countries; but so far its origin remains unexplained.

# *Epidemiological and Statistical Information*

## REPORTING OF ZOONOSES IN THE AMERICAS *

Many of the zoonoses are known to occur in the Americas, but information on their distribution in man and in animals is incomplete. Human cases of certain of these diseases are notifiable in some countries of the Region and statistics are forwarded to the Pan American Health Organization (PAHO). Except for rabies, however, little has been done until recently to assemble the available data on known cases of zoonoses both in man and in animals.

* Based on a report prepared by Drs A. Horwitz, R. R. Puffer & E. C. Chamberlayne for the Advisory Committee on Tropical Medicine, US National Academy of Sciences—National Research Council

FIG. 1. REPORTED CASES OF RABIES IN ANIMALS IN THE AMERICAS, 1958

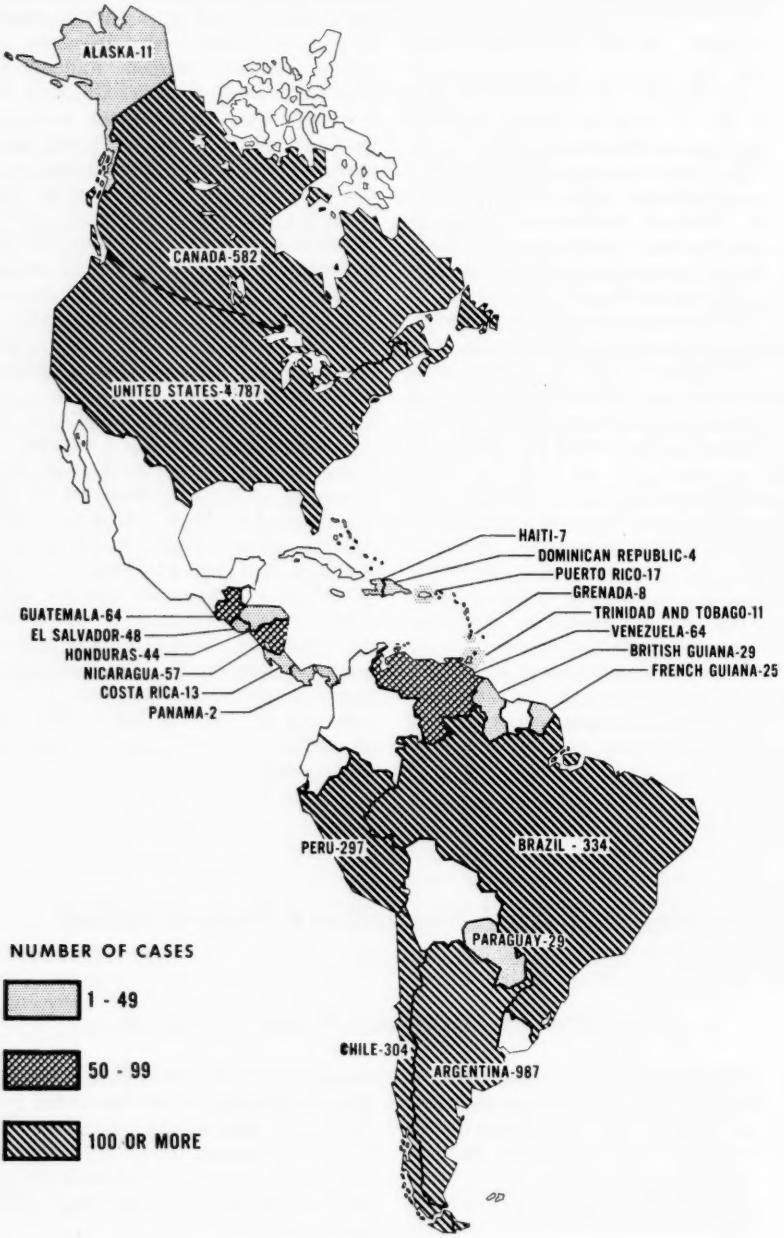
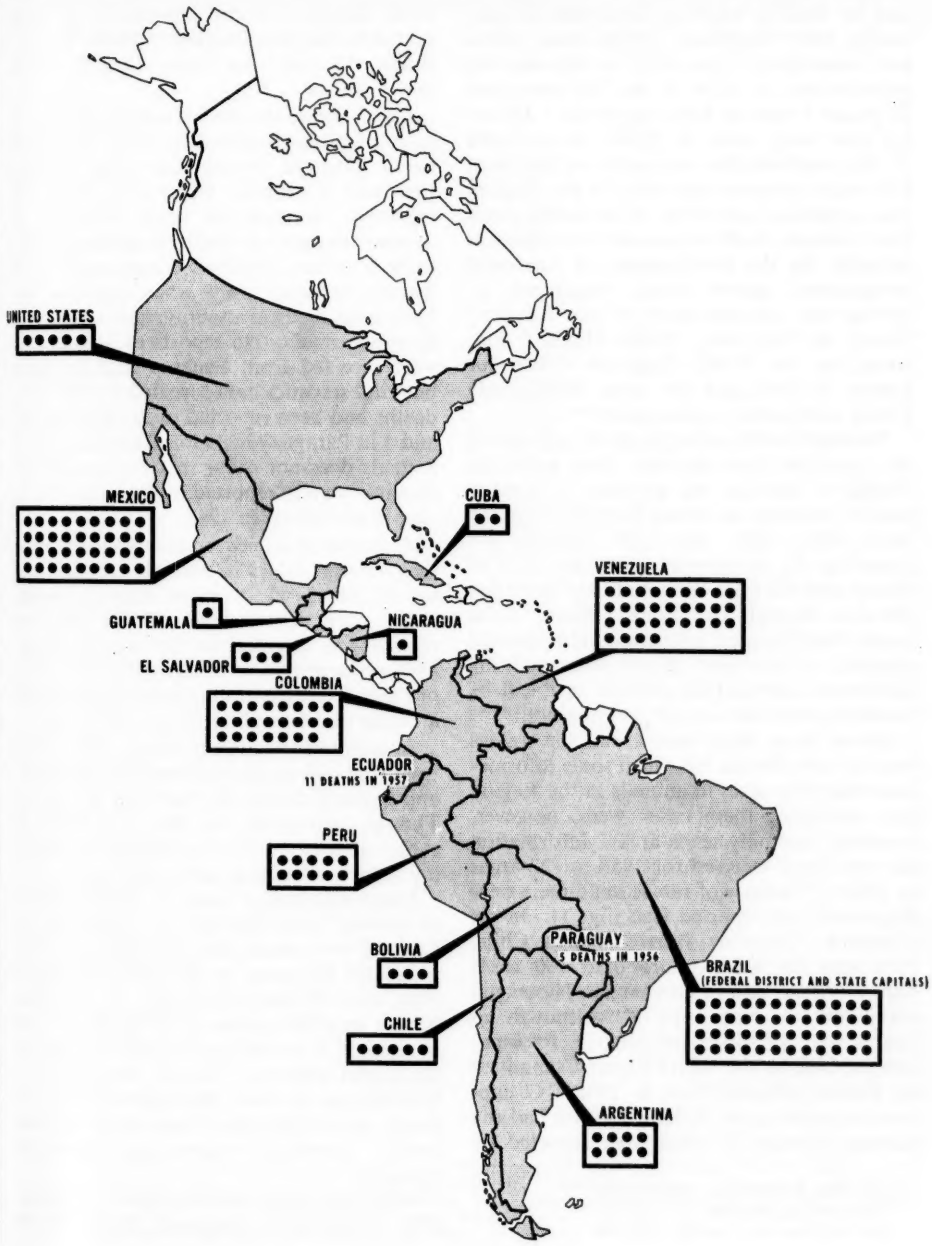


FIG. 2. REPORTED CASES OF RABIES IN HUMANS IN THE AMERICAS, 1958



Increasing attention is being paid to zoonoses by the countries of the Americas and by PAHO, which is concerned in particular with brucellosis, hydatidosis, rabies and tuberculosis. One result of this was the establishment in 1956 of the Pan American Zoonoses Center in Azul, Argentina.[1] Efforts are now being made by PAHO to assemble all the available data on certain of the most important zoonoses occurring in the Region, since organized reporting of morbidity from these diseases, both in man and in animals, is essential for the development of successful programmes against them. Organized reporting was recommended by the Advisory Group on Veterinary Public Health[2] convened by the WHO Regional Office for Europe in 1955 and the Joint WHO/FAO Expert Committee on Zoonoses.[3]

National health and agricultural services in the Americas have therefore been asked by PAHO to indicate the numbers of known cases of zoonoses in animal populations in the years 1956, 1957 and 1958. Forms for recording the number of cases, the type of disease and the type of animal have been distributed through the Zone Offices. It is hoped that this step will stimulate improved reporting in the field of zoonoses and the tabulation and analysis of data that will be valuable in future control programmes.

Before these data were asked for, rabies was the only disease for which some information regarding cases in animals in the Region was available; these cases were, however, reported from only seven areas. Information has now been received for 1958 for 22 areas in which 7724 cases of rabies in animals were diagnosed and reported (see Fig. 1). In six countries—Argentina, Brazil, Canada, Chile, Peru and the USA—more than 100 cases were reported, and in Guatemala, Nicaragua and Venezuela more than 50. Although no figures were provided for Mexico, information received by the WHO Expert Committee on Rabies indicated that, in 1958, 747 captured animals in the Federal District had the disease; likewise 81 cases were reported by the National Institute of Hygiene of Ecuador. Rabies is most frequently found in dogs and cows, though it is also reported to be transmitted by bats in a number of areas, including Brazil, Mexico, the USA, French Guiana and Trinidad.

Fig. 2 shows the distribution of the human cases of rabies reported in 1958; these numbered 176. In Brazil, Colombia, Mexico, Peru and Venezuela, 10 or more cases were reported; in some of these countries the number of cases and deaths is sufficiently large to be a serious problem. Cases of rabies are usually reported only when patients have been given medical attention and a laboratory diagnosis made. No reports of human cases were received from Ecuador and Paraguay, but vital statistics data revealed that 11 rabies deaths had been reported in Ecuador in 1957 and 5 in Paraguay in 1956. Rabies in man or animals does not occur in Uruguay; the last case in man was reported in 1947, and the last case in an animal in 1949.

A comparison between the two maps shows that data on rabies in animals are lacking in several areas where more than 10 human cases were reported in 1958. Improved reporting is essential so that loss of human lives, economic losses in cattle, and the burden of Pasteur treatment may be reduced through a better understanding of the problem.

In addition to data on rabies, reports have been received on cases of anthrax, brucellosis and hydatid disease in man and in animals. Though incomplete, the data (see table) are sufficient to show the usefulness of combining reports of human and animal cases.

Large numbers of cases of hydatid disease in animals were reported in Argentina and Chile. For example, the 1958 figures in Chile were: 101 915 cases in animals, 123 cases in man, and 44 deaths in man. As slaughterhouses were the source of the figure for cases in animals, it probably represents only part of the actual number. Though the number of human cases is small, the high proportion of deaths shows that the disease is a veterinary health problem warranting preventive measures.

Although bovine tuberculosis is an eradicable disease and campaigns against it are

[1] See *Chron. Wld Hlth Org.*, 1957, **11**, 348.
[2] *Wld Hlth Org. techn. Rep. Ser.*, 1956, **111**
[3] *Wld Hlth Org. techn. Rep. Ser.*, 1959, **169**

## REPORTED CASES OF SELECTED ZOONOSES IN MAN AND ANIMALS, IN THE AMERICAS, 1956-1958

| Disease and area | 1956 | | 1957 | | 1958 | |
|---|---|---|---|---|---|---|
| | Man | Animals | Man | Animals | Man | Animals |
| **Anthrax** | | | | | | |
| Argentina | 244 | 1 295 | 211 | 1 100 | 137 | 1 399 |
| Bolivia | 20 | ... | ... | ... | ... | ... |
| Brazil | 5 [a] | 31 | — [a] | 152 | — [a] | 97 |
| Canada | — | 3 | — | — | 1 | 1 |
| Chile | 232 | 1 585 | 392 | 1 718 | 405 | 1 275 |
| Colombia | 38 [b] | ... | 8 [b] | ... | 9 [b] | ... |
| Costa Rica | 8 | (42) [c] | 10 | (28) [c] | 15 | (33) [c] |
| El Salvador | ... | 9 | ... | 14 | ... | 7 |
| Guatemala | ... | 24 | ... | 18 | ... | 23 |
| Haiti | 45 | ... | 76 | ... | ... | ... |
| Honduras | ... | 12 | ... | 38 | ... | 42 |
| Mexico | 111 | ... | 143 | ... | 148 | ... |
| Nicaragua | 1 | 18 | ... | 34 | ... | 12 |
| Panama | 1 | — | 1 | — | — | — |
| Peru | 36 [b] | ... | 35 [b] | ... | 75 [b] | ... |
| United States | 38 | (247) [d] | 26 | (845) [d] | 16 | (801) [d] |
| Uruguay | 43 | ... | ... | ... | ... | ... |
| Venezuela | 58 [b] | 29 | 45 [b] | 290 | 29 [b] | 62 |
| British Guiana | — | — | — | 1 | — | — |
| Puerto Rico | — | 10 | — | 37 | — | 9 |
| **Brucellosis** | | | | | | |
| Argentina | 3 398 | 1 200 | 2 741 | 293 | 2 747 | 353 |
| Brazil | 6 [a] | 25 | 1 [a] | 99 | 2 [a] | 18 |
| Canada | 141 | ... [e] | 120 | ... [e] | 113 | ... [e] |
| Chile | 9 | ... | 11 | ... | 5 | ... |
| Colombia | 11 [b] | ... | 6 [b] | ... | 12 [b] | ... |
| Costa Rica | 9 | 335 | 6 | 1 042 | 3 | 599 |
| Cuba | 1 | ... | 4 | ... | ... | ... |
| El Salvador | 6 [b] | 922 | 11 [b] | 831 | 8 [b] | 645 |
| Guatemala | ... | 525 | ... | 834 | ... | 347 |
| Honduras | ... | 62 | ... | 84 | ... | 72 |
| Mexico | 1 218 | ... | 921 | ... | 1 220 | ... |
| Nicaragua | ... | — | ... | 824 | ... | 749 |
| Panama | 1 | — | 2 | 124 | 2 | 242 |
| Peru | 639 [b] | 906 | 880 [b] | 253 | 522 [b] | 345 |
| United States | 1 300 | 309 179 | 983 | 271 167 | 924 | 241 969 |
| Venezuela | 17 [b] | ... | 16 [b] | ... | 19 [b] | ... |
| Alaska | — | 16 | — | 1 | 1 | 3 |
| British Honduras | — | 1 | — | — | — | — |
| French Guiana | — | — | 1 | — | — | — |
| Hawaii | 1 | — | 1 | — | 1 | 769 |

[a] Federal District and State capitals except Niteroi, 1957 and 1958 [b] Reporting area [c] Number of outbreaks (in parentheses) [d] Number of herds affected (in parentheses) [e] Estimated infection 1956, 4.2 %; according to National Brucellosis Program 6.85 % of herds, 0.97 % of cattle infected 1957-1958
... Data not available * Disease not notifiable — No case

## REPORTED CASES OF SELECTED ZOONOSES IN MAN AND ANIMALS, IN THE AMERICAS, 1956-1958 (cont.)

| Disease and area | 1956 | | 1957 | | 1958 | |
|---|---|---|---|---|---|---|
| | Man | Animals | Man | Animals | Man | Animals |
| **Brucellosis** (cont.) | | | | | | |
| Jamaica | — | 22 | — | 36 | — | 8 |
| Netherlands Antilles | * | 1 | * | 2 | * | 1 |
| Puerto Rico | 3 | 2 241 | — | 2 488 | 1 | 1 503 |
| Virgin Islands (USA) | — | — | — | 117 | — | 42 |
| **Hydatid disease** | | | | | | |
| Argentina | 149 | 323 008 | 126 | 318 063 | 148 | 447 807 |
| Chile | 122 | 82 709 | 115 | 111 582 | 123 | 101 915 |
| Costa Rica | * | 15 | * | 23 | * | 15 |
| El Salvador | — [b] | — | — [b] | 32 | — [b] | 18 |
| Guatemala | ... | 328 | ... | 272 | ... | 138 |
| Honduras | ... | — | ... | 64 | ... | 62 |
| Peru | 40 [b] | ... | 78 [b] | ... | 59 [b] | ... |
| Uruguay | 45 | ... | 61 | ... | 86 | ... |
| Jamaica | — | 63 | — | 62 | — | 53 |
| **Rabies** | | | | | | |
| Argentina | 16 | 1 217 | 13 | 833 | 8 | 987 |
| Bolivia | — | ... | ... | ... | 3 | ... |
| Brazil | 28 [a] | 150 | 33 [a] | 342 | 48 [a] | 334 |
| Canada | — | 180 | — | 179 | — | 582 |
| Chile | 4 | 280 | 2 | 197 | 5 | 304 |
| Colombia | 18 [b] | ... | 33 [b] | ... | 23 [b] | ... |
| Costa Rica | — | 2 | 2 | 39 | — | 13 |
| Cuba | — | ... | 2 | ... | 2 | ... |
| Dominican Republic | — | 3 | — | 2 | — | 4 |
| El Salvador | 4 [b] | 31 | 2 | 83 | 3 [b] | 48 |
| Guatemala | 2 | 67 | 4 | 53 | 1 | 64 |
| Haiti | — | 2 | — | 9 | — | 7 |
| Honduras | ... | 48 | 1 | 46 | — | 44 |
| Mexico | 31 | ... | 23 | ... | 36 | ... |
| Nicaragua | ... | 51 | 3 | 52 | 1 | 57 |
| Panama | — | — | — | 2 | — | 2 |
| Paraguay | ... | 42 | 1 [b] | 75 | ... | 29 |
| Peru | 15 [b] | 213 | 26 [b] | 300 | 10 [b] | 297 |
| United States | 10 [f] | 5 681 | 5 [f] | 4 542 | 5 | 4 787 |
| Venezuela | 18 | 25 | 11 | 11 | 31 | 64 |
| Alaska | — | 15 | — | 4 | — | 11 |
| British Guiana | * | 8 | * | 22 | * | 29 |
| French Guiana | — | — | — | — | — | 25 |
| Puerto Rico | — | 23 | — | 23 | — | 17 |
| Trinidad and Tobago | — | 3 | — | 3 | — | 11 |
| Windward Islands: | | | | | | |
| Grenada | ... | ... | ... | 24 | ... | 8 |

[a] Federal District and State capitals except Niteroi, 1957 and 1958 [b] Reporting area [f] Registered deaths
... Data not available * Disease not notifiable — No case

being carried out in a number of countries, it is still present in all but two areas for which information is available. In 1958, 18 areas reported the finding of positive reactors.

The information given in the table on four zoonoses in man and animals, together with information on five other zoonoses in animals, will shortly be published by the Pan American Sanitary Bureau, which acts as the WHO Regional Office for the Americas, in a report on cases of notifiable diseases in the Americas between 1949 and 1958. This publication [4] will appear both in English and in Spanish, and will be distributed widely to health officials in the Region.

[4] Pan American Sanitary Bureau (1960) *Reported cases of notifiable diseases in the Americas, 1949-1958* (Scientific Publications, No. 48), Washington, D.C. (In press)

# *Reports of Expert Groups*

## Venereal infections and treponematoses *

The simplified therapy, using sulfonamides and antibiotics, now available for venereal infections and treponematoses continues both to solve problems and to raise others. The treatment of venereal disease in seafarers is still governed by the Brussels Agreement of 1924; the mere fact—among others—that shipboard treatment is now practicable also on vessels without a doctor calls for a fresh examination of the workings of this Agreement. Treponematoses endemic in many countries have been attacked through mass campaigns, and programmes of eradication are now being planned for which the training of auxiliary workers and their teachers is of great importance.

The success of penicillin in treating yaws and syphilis has not been paralleled in gonorrhoea, and the risk of increased allergic reactions which seems likely to result from the widespread use and misuse of this drug is giving cause for concern. An evaluation of other drugs for treating these infections is thus of immediate interest. Recent developments in serological standardization and methodology have implications for public health authorities, physicians and scientists concerned with such infections. All these aspects of venereal disease control are considered in the recently published fifth report of the WHO Expert Committee on this subject.[1]

The Committee was of the opinion that the health of seafarers could best be safeguarded by defining anew, and periodically reviewing, the technical implications of the Brussels Agreement to enable it to be administered with fuller understanding in the light of recent medical progress, and by assessing its usefulness through a survey of its functioning in the principal sea and river ports of Member States of WHO, through consultant studies, and through yearly returns from governments adhering to the Agreement.

Reviewing venereal infections ten years after the introduction of penicillin, the Committee pointed out that these are by no means dying diseases. Although there has been a spectacular decline in the incidence of early syphilis in many countries, it is still quite common in towns and seaport areas of Asia and South America, and ranks fourth among notifiable diseases in the United States of America. Intensified efforts against syphilis are particularly necessary in Africa, where it is feared that the disease may spread into the

* WHO Expert Committee on Venereal Infections and Treponematoses (1960) *Fifth report* (*Wld Hlth Org. techn. Rep. Ser.*, No. 190), 73 pages. Price: 3/6, $0.60, Sw. fr. 2.—. Also published in French and Spanish.

[1] Members of the Committee: Dr W. J. Brown, USA; Professor G. A. Canaperia, Italy (Chairman); Professor E. I. Grin, Yugoslavia; Dr. F. Nery Guimarães, Brazil; Dr G. L. M. McElligott, United Kingdom; Dr L. M. Ram, Singapore (Rapporteur); Professor J. Towpik, Poland; Dr R. Wasito, Indonesia (Vice-Chairman). Secretariat: Dr T. Guthe, WHO (Secretary); Dr C. J. Hackett, WHO.

rural tropical areas where yaws is being eradicated (see below). Gonorrhoea presents a more stubborn problem; in 15 countries there has been a rise in the number of reported cases, while in the United States of America it is estimated that the incidence is five to ten times higher than is actually reported. The Committee felt that failure to control the disease must be attributed to difficulties in defining the reservoir of infection, in diagnosis, and in treatment and management —the last largely due to the lessened sensitivity of the gonococcus to penicillin. Several reasons were advanced to explain why gonorrhoea and syphilis are not declining *pari passu*, and various possible measures for improving gonorrhoea control were examined. One of the most useful of these appears to be a promising technique for fluorescent antibody identification. The need for establishing an International Gonococcus Reference Laboratory was confirmed, and recommendations were made for further research. It was felt that streptomycin offers the most useful alternative treatment where penicillin fails.

The Committee then noted the great progress that has been made in the eradication of endemic treponematoses from high-prevalence areas. The campaigns of mass treatment undertaken during the past decade have been eminently successful. In Bosnia it is considered that complete eradication of syphilis has been achieved, no new active case of endemic syphilis having been found for five years. Indonesia, Nigeria and Haiti are examples of the many areas where yaws is receding as a result of treatment campaigns using PAM, and in many parts of the world its prevalence is decreasing, probably because of the improvement in standards of living. Where the prevalence of endemic treponematoses has recently been high, or is so still, there is little or no venereal syphilis, and experimental studies with *T. pertenue* followed by *T. pallidum* in animals and man support the existence of cross immunity after 6-12 months. There thus appears to be a risk of the introduction of venereal syphilis into rural populations among whom yaws has been eradicated, or at least greatly reduced, by national mass campaigns. The Committee therefore recommended that there should be no delay by health administrations in extending the campaign for the world-wide eradication of yaws and endemic syphilis, and that the prevalence of venereal syphilis in towns and rural areas should be urgently ascertained, so that the necessary public health measures may be taken in time.

The report next deals with the problem of the side effects of penicillin. The known total deaths from this antibiotic are some 90-115 yearly in the world, but there are undoubtedly more, and the mechanism of serious reactions to penicillin suggests that there may be an increasing number of reactors in the future. This fact may well prejudice the smooth development of venereal syphilis control programmes, and perhaps also of eradication campaigns based on the use of penicillin. Available information indicates that sensitivity to penicillin can be induced by any penicillin salt or preparation; by any mode and route of administration; and probably by any dosage, however small; while repeated small dosages are apparently more sensitizing than a few large ones. The incidence of reactions seems, moreover, to increase with age. Nor is the therapeutic and prophylactic administration of the drug the only source of sensitization, which may arise as an occupational hazard (e.g., among medical personnel and workers in drug manufacturers'), or through "hidden contacts"[2] (e.g., milk from cattle treated with penicillin for mastitis, virus vaccines, penicillin-contaminated syringes, and inhalation or contact with penicillin-contaminated dust). The Committee made detailed recommendations for the prevention of such reactions, through restriction of use of the drug, and through research on the nature of sensitizing reactions and on the determination of latent sensitivity. Suggestions were made for an exploration by manufacturers, WHO and national health administrations of drugs alternative to penicillin for use against the treponematoses.

The progress of WHO activities in the fields of international standardization and of

[2] See: Siegel, B. B. (1959) *Bull. Wld Hlth Org.*, 21, 703.

the serological and laboratory aspects of venereal infections is outlined, with particular reference to PAM, benzathine penicillin, cardiolipin, lecithin, and human syphilitic serum. Previous suggestions for research are summarized, and further proposals are made for studies of the treponeme itself, of the epidemiological, pathological, clinical and diagnostic aspects, for long-term clinical and serological surveys aimed at evaluating the results of campaigns, and for prevention by the furnishing of venereal disease information and health education to those age groups at particular risk of infection.

## Vaccination programmes *

Thanks to vaccination, fewer persons now suffer or die from such diseases as diphtheria, poliomyelitis and tuberculosis. If immunization programmes using the best available vaccines were more generally applied, the risk of infection from certain diseases could be still further reduced. Some of the problems raised by vaccination procedures are discussed in a recently published report of a European Technical Conference on the Control of Infectious Diseases through Vaccination Programmes.[1] The report gives a broad picture of the legislation in force regarding vaccination in Europe. The degree of compulsion varies considerably from one country to another; many use a mixed system in which some vaccinations are compulsory, others not, and the general tendency is to substitute effective health education for compulsion by law. Very important are inspection and the recording of vaccinations, which make it possible to obtain reliable data regarding their effectiveness. Generally the cost of vaccination programmes is borne by the health authorities; in some cases the cost has to be met by the patient himself, which may adversely affect the success of the campaign.

The report assesses briefly the value of the most important vaccines and describes the present state of vaccination with them. Although smallpox does not exist as an endemic disease in European countries, it was generally felt that it was still necessary to maintain a relatively high level of immunity in the population through continued vaccination programmes. It was agreed that BCG vaccination should be considered as part of the over-all tuberculosis control programme of any country. The report discusses the two types of anti-polio vaccines used at present: inactivated virus vaccine and attenuated live virus vaccine, which has been successfully applied in the Soviet Union to more than 12 million persons. The use of triple vaccine against diphtheria, tetanus and pertussis is recommended, and consideration is given to the suitability and effectiveness of many other vaccines, such as those against influenza, typhoid, paratyphoid, tularaemia, brucellosis, rabies, etc., as well as those used against quarantinable diseases (yellow fever, typhus and cholera).

After dealing with the risks and techniques of different vaccinations, the report discusses the importance they may have in the control of infectious diseases, and finally suggests models for programmes which, in the opinion of the Conference, might be adopted in the various countries according to the degree of development of their health services and their own particular problems.

* European Technical Conference on the Control of Infectious Diseases through Vaccination Programmes (1960) *Report* (*Wld Hlth Org. techn. Rep. Ser.*, No. 198), Geneva, 21 pages. Price: 1/9, $0.30, Sw. fr. 1.

[1] An article based on some of the papers presented at this conference appeared in *WHO Chronicle*, 1960, 14, 131.

# *Notes and News*

## Diarrhoea caused by *Escherichia coli*

During the last fifteen years cases of diarrhoea have been observed in the newborn that appear to be due to strains of *Escherichia coli*. In spite of the evidence, however, some eminently qualified physicians and public health experts still do not acknowledge the existence of a relationship between these organisms and diarrhoea in young children.

As early as 1920 a strain of *E. coli* had been described in Germany that was suspected of causing an epidemic of diarrhoea in newborn children. But no satisfactory method existed in the identification of the *E. coli* group whereby the likely pathogens could be distinguished from the harmless strains; the concept of a causal relation was therefore not followed up, although research workers did from time to time claim that it existed. It was only some thirty years later that serological typing of *E. coli* by highly specific sera enabled the strains incriminated to be identified: the serological group O, for example, which includes Bray's *E. coli* var. *napolitanum*, Giles & Smith's alpha type, and Taylor's D-433. This group has an O antigen designated by the figure 111 and a capsular antigen called $B_4$, and is represented by the serological formula 0: 111::$B_4$. Another group (0: 55:: $B_5$) has been isolated from infants with diarrhoea in various parts of the world. A third group (0: 127:: $B_8$) is also associated with epidemics in infants. As well as being related serologically, these strains have common biochemical characteristics, are found in almost pure culture in the stools of infants suffering from diarrhoea, and are isolated only in exceptional cases from healthy children living in the same surroundings.

In a recent article [1] in the Boletín of the Pan American Sanitary Bureau, which acts as the WHO Regional Office for the Americas, Dr F. J. Payne reports on his observations of five epidemics over the past six years. Two of these epidemics were associated with *E. coli* 0: 55:: $B_5$, two others with 0:111:: $B_4$, and the last with 0:127::$B_8$. Apart from these three groups, 8 or 9 others appear to be probable or possible pathogens. In a series of 474 cases of acute diarrhoea in children of less than 2 years of age at Phoenix, Arizona, association with *E. coli* was shown in 25%, and with *Shigella* in another 25%. The serological types of *E. coli* mentioned were found in 40% of 98 children in this series. About half of the infections of the children in this age group were due to groups 0 : 111 and 0 : 55.

The epidemiology of this kind of infection is still very obscure. There is a single instance where the origin of an epidemic could be attributed to a child, suffering from a severe attack of diarrhoea, who was brought into a general paediatric ward. Outside hospital the study of contacts has borne little fruit. Only 12.4% of 244 contacts of all ages were carriers of *E. coli* (all the types being counted). Only in rare instances has other than the same type been found in the patient and in his contacts.

It is essential therefore to seek the sources and mode of infection by *E. coli*. It is not even known if the health measures taken against other organisms causing diarrhoea in infants are effective against pathogenic *E. coli*. What is known, however, is that infection with *E. coli* does not confer immunity; on the contrary, it tends to recur.

## Live poliovirus vaccines

The Second International Conference on Live Poliovirus Vaccines was held in Washington, D.C., from 6 to 11 June 1960, under the auspices of WHO and the Pan American Health Organization, with the financial assistance of the Sister Elizabeth Kenny Foundation of Minneapolis, Minnesota.

Since the first conference on this subject was held, in June 1959,[1] numerous field trials and

[1] *Bol. Ofic. sanit. panamer.*, 1960, **48**, 54

[1] See *WHO Chronicle*, 1959, **13**, 402; 1960, **14**, 137.

vaccination campaigns with live poliovirus vaccines have taken place under very varied conditions, and there have been extensive laboratory investigations on the properties of the attenuated poliovirus used in oral vaccines, and on the properties of the poliovirus excreted by vaccinated persons.

The second conference gave scientists from 20 countries an opportunity to review the results of these investigations, and to discuss the public health aspects of the use of live poliovirus vaccines. Points discussed included: laboratory evidence of attenuation and safety; field evidence of safety; spread of attenuated poliovirus; the immunization of special groups (premature and newborn babies, pregnant women, and persons receiving medical or surgical treatment); evidence of effectiveness in man; possibilities of eradicating poliomyelitis.

## Expert Committee on Poliomyelitis

The WHO Expert Committee on Poliomyelitis met in Washington, D.C., from 13 to 16 June 1960, immediately after the Second International Conference on Live Poliovirus Vaccines. Each of the participants was an expert in at least one of the following fields: virology, immunology, epidemiology, statistics, biological controls, public health aspects of mass immunization programmes.

The main purpose of the meeting was to review the present position of the control of poliomyelitis through vaccination and to advise on future action. The recommendations contained in the second report of the Expert Committee on Poliomyelitis [1] were reviewed in the light of more recent data. The results achieved so far with both inactivated and live attenuated vaccines under different epidemiological conditions were considered, and special attention was given to the public health aspects of their mass administration. The question of the safety and effectiveness of the recently developed live attenuated vaccines and criteria for the selection of the strains to be incorporated in them received special consideration.

An account of the Committee's work will be published in the Chronicle when its report appears.

## The teaching of psychiatry

The WHO Expert Committee on Mental Health met in Geneva, from 13 to 18 June 1960, to discuss the teaching of psychiatry and of mental health promotion to medical students.

The importance and emphasis given the undergraduate teaching of psychiatry vary greatly from country to country. In some medical schools, this subject does not appear on the curriculum; in others, it occupies nearly 700 hours of teaching time. In one school, 83% of the psychiatric teaching time is devoted to the psychoses, while another devotes only 12% of this time to this aspect of the subject. In some countries psychiatric teaching is mainly in the form of academic lectures; in others the emphasis is on practical work.

The Committee sought to establish the aims of the undergraduate teaching of psychiatry, the content and method of this teaching, the staff requirements, and the possible role of WHO in this field. In its discussions, it took into account the differences in psychiatric needs in different countries, as determined by cultural background, social structure and economic development.

An account of the Committee's work will be published in the Chronicle when its report appears.

## Study tours in Bulgaria, France and Czechoslovakia

Two study tours for public health administrators from European countries were organized by the WHO Regional Office for Europe in May and June.

During the first of these tours, which was concerned with rural health administration, a group of doctors from France (Algeria), Greece, Poland, Spain, Turkey and Yugoslavia visited Bulgaria and France. The tour lasted from 4 May to 4 June, and started in Sofia where the groups studied the basic concepts of public health in the

[1] *Wld Hlth Org. techn. Rep. Ser.*, 1958, **145**

Bulgarian People's Republic, health administration, and the training of health personnel, before going on to visit rural health installations in Tirnovo, Varna and Plovdiv. A similar programme was arranged in France, where the tour started at the National School of Public Health, Paris, and rural health services in the Soissons, Nîmes, Limoges and Orléans areas were visited.

The subject of the second tour, which took place in Czechoslovakia from 23 May to 11 June, was occupational health. The first four days were spent in Prague where the participants were given talks on the structure of health services, social security schemes, the organization of occupational health services, and programmes of research in Czechoslovakia. The rest of the time was spent studying occupational health and public health services in different parts of the country, with visits to institutions and industrial concerns. The participants in this tour were doctors from Austria, Belgium, Bulgaria, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Poland, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the USSR and Yugoslavia.

## Pathogenesis of essential hypertension

A Symposium on the Pathogenesis of Essential Hypertension was held in Prague, Czechoslovakia, from 23 to 28 May 1960, under the joint auspices of the Czechoslovak Cardiological Society and the WHO Regional Office for Europe. Some forty outstanding scientists in the fields of cardiology, physiology and pathology were invited to take part.

Although essential hypertension is a widespread condition and a frequent cause of premature invalidity and death, there is little agreement about its pathogenesis or about the role of various environmental factors. This situation makes any rational attempt at prevention impossible. The aim of the Symposium was to try, through discussion and criticism, to clear up the differences between various current concepts. The subject was dealt with under the following main headings: essential hypertension as a nosological entity and its natural history; epidemiology; the central nervous system and essential hypertension; haemodynamics of essential hypertension; vessel wall factors; and metabolic factors.

The urgent need for large-scale studies of the problem, supported and co-ordinated by WHO, was stressed, and recommendations were made on the most promising avenues of research.

## Tuberculosis seminar

A seminar on tuberculosis was held by WHO, in co-operation with the Government of Australia and the National Association for the Prevention of Tuberculosis in Australia, in Sydney, Australia, from 23 May to 3 June 1960. The participants were mainly from the Western Pacific Region, but the Eastern Mediterranean and South-East Asia Regions were also represented. The principal subjects of discussion were: measurement of the extent of the tuberculosis problem in a country; tuberculin testing and BCG vaccination; case-finding; the chemoprophylaxis of tuberculosis; the antimicrobial therapy of pulmonary tuberculosis; planning, organization and evaluation of tuberculosis control programmes; the role of WHO in the world tuberculosis programme.

## Education in nutrition

A seminar on education and training in nutrition, sponsored by WHO, FAO and UNICEF, was held in Rio de Janeiro, Brazil, from 15 to 24 June 1960. Its aim was to examine the channels, methods and techniques used for nutrition education in South American countries. Items on the agenda included: the social, cultural and economic aspects of food habits; ways of learning and teaching approaches suitable for education in nutrition; nutrition education in schools, families and communities; training in nutrition at university level; evaluation of education programmes in nutrition.

The 50 participants in the seminar included senior staff from health, education and agriculture services in Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela.

# People and Places

*Control of onchocerciasis vectors*

An investigation into difficulties experienced in the control of *Simulium* (blackflies), the vectors of onchocerciasis, in countries of the African Region is to be carried out by WHO. Dr A. W. A. Brown has been appointed by the Organization to visit the countries concerned, and his report on the situation will serve as a basis for future research. Now Head of the Department of Zoology, University of Western Ontario, Canada, Dr Brown was Biologist in the Division of Environmental Sanitation, WHO Headquarters, from 1956 to 1958.

*Sanitary engineering*

Dr Vicente M. Witt, of Ecuador, has been appointed WHO Professor of Sanitary Engineering (Chemistry) at the University of Madras, India. In this capacity, he will advise on the further development, organization and planning of a course in sanitary chemistry, bacteriology and biology.

Dr Witt, who graduated as a Civil Engineer from the Universidad Central, Quito, Ecuador, in 1948, holds M.S. and Ph.D. degrees in sanitary engineering, and had been engaged for several years in research work at the University of Michigan, Ann Arbor, USA.

*Protozoal diseases*

In 1958, the Sixth International Congress of Tropical Medicine and Malaria recommended that WHO should help in the elucidation of problems connected with leishmaniasis and amoebiasis. Dr P. C. C. Garnham recently spent a month in Geneva advising WHO on these problems and also on problems connected with toxoplasmosis and trypanosomiasis. Dr Garnham is Professor of Medical Protozoology at the London School of Hygiene and Tropical Medicine, and has studied protozoal diseases in Africa and Latin America.

*Health problems of seafarers*

WHO is at present undertaking a study of the nature and extent of the health problems of seafarers and of the health services available to them. Dr A. Hutchison, of the United Kingdom, has been appointed consultant for this study with the task of examining the answers to a questionnaire on the subject circulated by WHO to all Member States, personally assessing the situation in fifteen ports in countries at various stages of development, and preparing a report indicating further ways and means whereby health services can be provided to seafarers of all nationalities on a wider scale.

Dr Hutchison, who is at present Medical Officer of Health for the City of Kingston upon Hull, has wide experience of the health problems of seafarers, having served as Port Medical Officer and Medical Inspector for the Hull and Goole Port Health Authority, and Divisional Medical Officer and Port Boarding Medical Officer for the City of Glasgow.

*Bilharziasis control in Iraq*

Dr Rafael A. Torrico has been appointed by the WHO Regional Office for the Eastern Mediterranean as team leader to the bilharziasis control project in Iraq. A former chief of Parasitology and Tropical Diseases in the Institute of Regional Medicine of the University of North-West Argentina, Dr Torrico also served as Director of the Laboratory of Inter-American Co-operative Health Services in Cochabamba, Bolivia, for thirteen years, and as Professor of Parasitology and Tropical Medicine at the University of San Simon, Cochabamba.

*Virology research and reference centre*

Dr Ulrich Krech, of the University of Berne, Switzerland, has been appointed by WHO to advise the Philippines Department of Health on the establishment of a virology research and reference centre. Among the more common virus diseases in the Philippines are rabies, haemorrhagic fever, measles, influenza, some forms of pneumonia, the common cold, encephalitis, chickenpox, and mumps. The proposed virology centre is expected to reduce mortality through the

early diagnosis of this type of disease. It will also serve as a training centre for Filipino virologists.

Before joining the staff of the University of Berne, Dr Krech was Chief of the Virus Department of the Swiss Serum Institute. He obtained his medical degree at the University of Marburg/Lahn, Federal Republic of Germany, and has done post-graduate research on virology in Germany and the USA.

*Nurse educator for Laos*

Miss Phyllis D. Aldridge, of the United Kingdom, has been appointed senior WHO nurse educator in the maternal and child health programme in the Kingdom of Laos. On this assignment, she will work with Dr M. P. D. Martin, a WHO medical officer who went to Laos last year to survey the country's health needs and problems and to help the Government plan adequate health services for mothers and children. Dr Martin and Miss Aldridge will also establish training programmes for Lao personnel concerned with maternal and child health work.

Miss Aldridge did her nursing and midwifery training in London and Edinburgh, and studied nursing administration at the Royal College of Nursing, London. She has served as nursing sister for Bournemouth Health Department, England, and as assistant matron for the Board of Health, Nassau, Bahamas.

## CORRIGENDUM

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**PEOPLE AND PLACES**

p. 462, right-hand column, item headed *Malariologist for Turkey*, last line

*delete* and in Mexico